

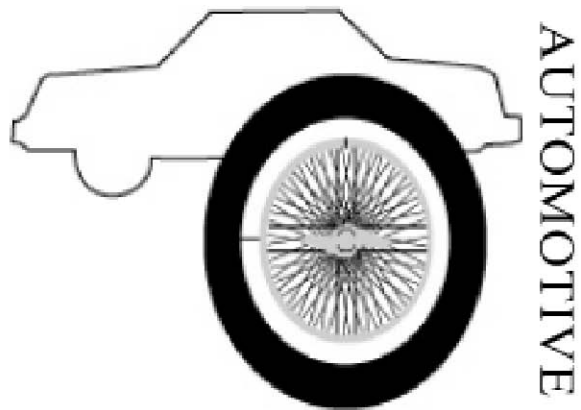
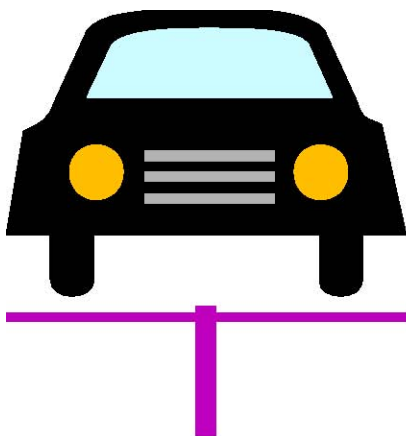
STATE OF UTAH

DEPARTMENT OF PUBLIC SAFETY



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OFFICIAL VEHICLE SAFETY INSPECTION MANUAL FOR PASSENGER VEHICLES AND LIGHT DUTY TRUCKS 2007



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INTRODUCTION

The Utah Highway Patrol-Vehicle Safety Inspection office has compiled this manual from many different sources.

- The American Association of Motor Vehicle Administrators (AAMVA)
- Vehicle Inspection Subcommittee of the American Automobile Manufacturers Association (AAMA)
- National Transportation Safety Administration (NHTSA), provides information relating to various FMVSS standards that can be found at this website www.nhtsa.gov.
- The Utah State Criminal and Traffic Code
- Federal Motor Vehicle Safety Standards (FMVSS)
- Commercial Vehicle Safety Alliance (CVSA), and the Code of Federal Regulations (CFR's).
- In addition, the Safety Inspection office is advised by the Motor Vehicle Safety Inspection Advisory Council on the adoption and implementation of Safety Inspection Standards.

This manual contains minimum standards relating to motor vehicle safety. It is expected that individual inspectors, inspection managers, fleet inspection stations and public inspection stations involved with the Safety Inspection program be familiar with this manual. Every effort has been made to provide specific inspection recommendations and procedures that will allow for the safe operation of motor vehicles on Utah's highways. Please visit our website at <http://safetyinspections.utah.gov>.

The Safety Inspection staff is committed to the safety of the motoring public. We recognize that those involved with the Safety Inspection Program are also concerned with vehicle safety.

- This revised manual has changes that place more responsibility on owners for repairs of non-safety critical items.
- Many of these changes reflect the same requirements as the commercial motor vehicle industry.

In addition to changes to the manual, Safety Inspection is reviewing its operating policies and procedures. Utah law requires the Safety Inspection office to "investigate complaints" and to protect consumers from "unwanted or unneeded repairs or adjustments", 53-8-204 UCA. To protect the integrity of the Safety Inspection program, those who violate these provisions will be dealt with both civilly and criminally.

Safety Inspection encourages all those who participate in this program to become familiar with these rules. This program is only successful with the cooperation and determination of the many stations and inspectors found throughout the state. Safety Inspection looks forward to any comments, concerns or questions that may arise in carrying out our objective of safer vehicles for Utah's highways.

This manual supersedes all previous manuals and shall be used in determining the pass/fail condition of vehicle equipment.

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***** All changes from the 2006 Manual to the 2007 Manual have been underlined and highlighted for your convenience. *****

EDUCATIONAL INSTITUTIONS

BEAR RIVER REGION #5596 BRIDGERLAND APPLIED TECHNOLOGY CENTER Mike Nield, Dept. Head/Instructor 1301 North 600 West Logan, Utah 84321 Phone (for students) (435) 753-6780 Fax (435) 750-3046	SOUTH EAST REGION #5602 COLLEGE OF EASTERN UTAH Stanley Martineau, CEU 451 East 400 North Price, Utah 84501 Phone (435) 613-5221 Fax (435) 613-5801
OGDEN-WEBER REGION #5597 WEBER STATE UNIVERSITY Maureen Fryer, Coordinator Roger Crockett, Administrator Promontory Tower 4006 University Circle Ogden, Utah 84408-4006 Continuing Education Classes (801) 626-6600 or 1-800-848-7770 Fax (801) 626-7095	SOUTH EAST REGION #6846 CEU – SAN JUAN CAMPUS Shirley Clarke, Test Coordinator 639 West 100 South Blanding, Utah 84511 Phone (435) 678-2201 ext. 171 Fax (435) 678-2220
DAVIS-MORGAN REGION #5598 DAVIS ATC Else Zwiefel, Coordinator 550 East 300 South Kaysville, Utah 84037-2699 New Inspector Classes / CD Recertification Continuing Education Testing Center (801) 593-2361 Fax (801) 593-2533	SOUTH WEST REGION #5603 SOUTHERN UTAH UNIVERSITY Richard Wittwer, Coordinator 351 West Center Street Cedar City, Utah 84720 Classes for New Inspectors & CD Recertification Phone (for students) (435) 865-8196 Fax (435) 652-8087
WASATCH FRONT SO. REGION #5599 SALT LAKE COMMUNITY COLLEGE / <u>Miller Campus</u> Anita Oleksy, Program Operations Specialist 9750 South 300 West, Room #3-211 Sandy, Utah 84070 Challenge Testing & New Inspector Classes Phone (801) 957-4154 Fax (801) 957-5282	WEST REGION #5604 DIXIE APPLIED TECHNOLOGY COLLEGE Kelle Stephens, Custom Fit Training 225 South 700 East 127 Hazy Bldg. St. George, Utah 84770 Phone (435) 652-7735 Receptionist Phone (435) 652-7741 Fax (435) 652-7870 stephenk@dixie.edu
MOUNTAINLANDS REGION #5600 MOUNTAINLAND ATC Mike Walker, Coordinator Chris Brems, Instructor 987 South Geneva Road Orem, Utah 84058 Challenge Testing only (801) 863-7570 New Inspector Classes (801) 863-6282 Fax (801) 863-7520	UINTAH BASIN REGION #5605 UINTAH BASIN ATC Robert Meeks, Coordinator 1100 East Lagoon Street Roosevelt, Utah 84066 New Inspector Classes & CD Recertification Phone (435) 722-4523 Fax (435) 722-5804
CENTRAL REGION #5601 SEVIER VALLEY ATC Keith Church, Coordinator 200 South 800 West Richfield, Utah 84701 New Inspector Classes Phone (435) 893-2252 Fax (435) 896-9753	WASATCH FRONT WEST REGION #6639 SALT LAKE / TOOELE ATC (SLTACT) West Valley Training Center 2255 South 5370 West West Valley City, Utah 84120 Ashley Phone (801) 493-8733 Nancy Phone (801) 493-8731 Fax (801) 493-8750

INSPECTOR CERTIFICATION PROCEDURES

- A. Inspectors seeking re-certification of his/her safety inspection authority will be required to obtain re-certification utilizing one of three available options.**
1. Option #1 * – Attend the entire 16-hour safety inspection course and pass the final test with an 80% or higher score. This course is currently available through the Regional Educational Institutions (see page 1). Fee - \$90.00 includes cost of testing.
 2. Option #2 * - Online Safety Inspector re-certification is available at www.utahsafetyinspection.com or you may purchase a 'CD' that is available at any of the educational institutions. Only persons certified during the previous year, last 365 days, will be allowed to re-certify utilizing the 'CD' or online certification process. All other's, who have allowed their certification to lapse for more than one-year, 365 days, will be required to attend the full 16-hour Safety Inspection Course offered through any of the twelve Regional Educational Institutions.
- B. It has long been a concern of the Utah Highway Patrol that many inspectors have been certified a number of years with no follow-up training provided. This training is being made available in an effort to educate and upgrade inspectors and keep them current on new developments in the Safety Inspection Program. In order to maintain the integrity of the Safety Inspection Program, and to ensure that Utah citizens are receiving a proper safety inspection, this new training requirement is being implemented statewide.**
- C. A currently certified inspector may utilize any of the two options for recertification, beginning two months prior to the expiration of his/her certification.**

VEHICLE SAFETY INSPECTION PROCEDURES

A. INITIATING THE INSPECTION

1. Request registration paperwork. (Vehicles may be inspected without registration paperwork.)
2. Verify vehicle identification number (VIN.)
3. Write the date of inspection on the inspection certificate.
4. Write owner and vehicle information on inspection certificate.
5. Vehicle mileage must be recorded.
6. Inspectors must write their inspector number in the appropriate box.
7. Inspectors may not sign the certificate until the vehicle passes the vehicle inspection process.

B. CHECK VEHICLE INTERIOR (Can be done from parking area to inspection stall)

1. Check for impaired visibility through windshield.
2. Check for adequate visibility from required mirrors.
3. Check seatbelts for proper operation.
4. Check for looseness in steering.
5. Check for play in brake pedal.
6. Check emergency brake for proper operation.
7. Check horn. Horn must be audible at 200 feet.
8. Check windshield wiper / washer operations.
9. Check heater/defroster operation.

VEHICLE SAFETY INSPECTION PROCEDURES - Continued

C. CHECK VEHICLE EXTERIOR

1. Check high and low beam headlights.
2. Check headlights for proper aim.
3. Check parking lights, tail lights, signal lights, brake lights, marker lights and reflex reflectors.
4. Check for the proper color of lights.
5. Check tires for proper inflation with tire pressure gauge.
6. Check body, fenders, door, hood latches and bumpers
7. Check for broken glass.
8. Check for window tinting. Measure light transmittance on front side windows and windshield. Record reading on Safety Inspection Certificate.

D. CHECK UNDER HOOD

1. Check belts.
2. Check hoses.
3. Check power steering pump.
4. Check wiring.
5. Check exhaust manifold.
6. Check master cylinder.
7. Check for fuel leaks.

VEHICLE SAFETY INSPECTION PROCEDURES – Continued

E. CHECK SUSPENSION AND UNDERCARRIAGE

1. Check wheel bearings.
2. Check ball joints.
3. Check tie rod ends.
4. Check idler arms.
5. Check shock absorbers.
6. Check springs (coil & leaf).
7. Check exhaust system.
8. Check floor pans.
9. Check fuel system lines.

F. CHECK WHEELS AND BRAKES

1. Check for loose or missing lug nuts.
2. Check for cracked wheels.
3. Check pads and/or shoes.
4. Check rotors and/or drums.
5. Brake measurements must be recorded on the inspection certificate.
6. Check for fluid leaks.
7. Check brake hoses.

***NOTE:** *Vehicles that fail a plate brake test, but have adequate pad and or shoe thickness, must still be rejected until repairs are made. Record actual brake pad measurement.*

LIFTED OR LOWERED VEHICLES

A. Lifted Vehicles:

1. Check that fenders cover full width of tire.
2. Check for mud flaps. (Must cover full width and top 50% of tire).
3. Check frame height. (Based on Gross Vehicle Weight Rating, GVWR).
4. Check for body lift.
5. Check for stacked blocks.
6. Check for modification of brake hoses.
7. Check headlight aim and vertical height. (Maximum headlight height is 54" to center of the bulb).

B. Lowered Vehicles

1. Check that fenders cover full width of tire.
2. Check for mud flaps, when required. (Must cover full width of tire).
3. Check for minimum ground clearance.
4. Check for removal of original suspension components.

REJECT VEHICLE PROCEDURES – PAPER CERTIFICATES

- A. When a reject item is found, a full vehicle inspection must still be completed.
- B. If a vehicle fails an inspection and no repairs are made, give the owner the reject certificate.
- C. Do not sign the inspection certificate if a reject certificate is issued.
- D. If a customers returns within 15 days, no additional charge may be made to verify repairs.
- E. On rejected vehicles that fail to return, the State Tax and Owner copies must be returned to the Safety Inspection office within 45 days of the inspection date.
- F. Any item rejected and repaired during an inspection must be documented as repaired on the certificate.
- G. Any certified inspector at the inspection facility may verify reject repairs.
- H. When all rejected items have been repaired, the verifying inspector must sign the safety inspection certificate.
- I. If the verifying inspector is not the original inspector, he/she must sign the safety inspection certificate, and enter their inspector license number on the safety inspection certificate.

REJECT VEHICLE PROCEDURES – ON-LINE CERTIFICATES

- A. When all rejected items have been repaired, the verifying inspector must sign the safety inspection certificate.
- B. If no repairs are made, print out and give the owner the reject certificate.
- C. Do not sign a reject certificate.
- D. If a customer returns within 15 calendar days, no additional charge may be made to verify repairs.
- E. Any item rejected and repaired during an inspection must be documented as repaired on the certificate.
- F. Any certified inspector **AND** any inspection facility MAY CERTIFY REJECTED REPAIRS. (No additional charges may be added).

PASSED VEHICLE PROCEDURES – PAPER CERTIFICATES

- A. The inspector performing the inspection must sign the vehicle inspection certificate. Inspectors using the Vehicle Inspection Report, VIR, in connection with the emission testing process, must sign the VIR in the location reserved for the inspector's signature.
- B. The customer must receive the State Tax and Owner copies of the inspection certificate.
- C. Maximum Safety Inspection fees are as follows:

\$ 9.00	Motorcycles
\$ 17.00	Passenger vehicles and trucks (26,000 lbs GVWR or less.)
\$ 22.00	Any vehicle that requires the disassembly of a front hub or removal of a rear axle for inspection
\$ 17.00	Trucks, buses and trailers over 26,000 lbs GVWR

PASSED VEHICLE PROCEDURES – ON-LINE CERTIFICATES

- A. Print out the on-line passed vehicle inspection certificate.
- B. The inspector performing the inspection must sign the vehicle inspection certificate.
- C. The customer must be given the passing inspection certificate.
- D. Maximum safety inspection fees are as follows:

\$ 9.00	Motorcycles
\$ 17.00	Passenger vehicles and trucks (26,000 lbs GVWR or less.)
\$ 22.00	Any vehicle that requires the disassembly of a front hub or removal of a rear axle for inspection
\$ 17.00	Trucks, buses and trailers over 26,000 lbs GVWR

Refer to the Vehicle Safety Inspection Manual Section for specific details regarding the inspection process.

INSPECTION REPORT PROCEDURE (PAPER CERTIFICATES ONLY)

- A. Report forms are to be completed as follows:
 - 1. Date the inspection was completed.
 - 2. Owner's name.
 - 3. Year and make of the vehicle.
 - 4. Vehicle identification number.
 - 5. Appropriate notation in any of the fifteen repair columns.
 - 6. Total cost of the repair, including the inspection fee.
 - 7. Certificate or sticker number.
- B. Certificate or sticker numbers of paper books must be listed in numerical order starting with the lowest number and listed in groups of 25. i.e.: 1-25, 26-50, etc. (paper only)
- C. A separate report form must be used for the certificates and for the stickers.
- D. Duplicate certificates or stickers must be noted as "duplicate" on the report form. **(NOT REQUIRED with On-line inspections)**
- E. Lost or stolen certificates or stickers must be listed as "lost or stolen" on the report form.
- F. Certificates and stickers rendered unusable through some mishap must be recorded as "voided" on the report form and certificates/stickers must be returned to the Vehicle Safety Inspection office. **(NOT REQUIRED with On-line inspections)**
- G. Rejected vehicles that have not returned within 15 days to the original station must be listed in the same order and the words "rejected," printed on the same line. **(NOT REQUIRED with On-line inspections)**
- H. Failure to submit the required reports will be considered grounds for suspension or revocation of a license. **(NOT REQUIRED with On-line inspections)**
- I. Returning of Rejects with paper issued certificates:
 - 1. On rejected vehicles that fail to return for re-inspection, the State Tax and Owner copies must be returned to the Safety Inspection office within 45 days of the original inspection date. **(NOT REQUIRED with On-line inspections)**

BUILDING AND EQUIPMENT REQUIREMENTS

A. The following conditions must be met before a license will be granted:

1. A building is required. It must be of permanent construction, 12 feet wide or wider, and 25 feet long or longer. The building must be capable of housing the vehicle that is being inspected. If a headlight-aiming screen is used, a level surface 25 feet from the screen must be available for headlight aiming purposes. (See Headlight Aiming Screen, Diagram P-9)
2. The station must have the following:
 - a. A level concrete or asphalt floor.
 - b. The necessary hand tools to conduct an inspection.
 - c. A hoist or heavy duty jacks and jack stands to allow for the inspection of the undercarriage and the front steering and suspension components.
 - d. Measuring gauges and instruments for determining minimum specifications in the inspection process.
 - e. A two-piece light meter kit capable of measuring window light transmittance at a minimum of $\pm 3\%$.
 - f. A current safety inspection manual.
3. Any exceptions to the minimum building and equipment requirements must be submitted in writing to the Vehicle Safety Inspection office for approval.
4. A \$1,000.00 Surety Bond or Garage Keepers Insurance is required while the station is in business as an official Safety Inspection Station.

REQUIRED EQUIPMENT LIST

- A. Passenger, Light Truck Requirements:
 - 1. Headlight Aiming Device (machine, optical, or screen)
 - 2. Hoist and or Heavy Duty Jack with Jack Stands
 - 3. Light Meter (2 piece approved by division)* (See Required Equipment List, Section D)
 - 4. Hand Tools (wrenches, screwdrivers, ratchets, etc.)
 - 5. Dial Indicator (for measuring ball joint and suspension component tolerances)
 - 6. Tire Tread Depth Gauge
 - 7. Current Safety Inspection Manual
 - 8. Tire Pressure Gauge**
- B. Brake Gauges:
 - 1. Bonded
 - 2. Riveted
 - 3. Disc Pad
 - 4. Rotor
 - 5. Drum
- C. Tools can be purchased from any company that manufactures these types of tools.

****NOTE: Riveted brake lining gauge can be used for tire tread depth gauge or vice versa.***

REQUIRED EQUIPMENT LIST - Continued

- D. Department approved light meters can be ordered from the following:
1. Advanced Design Systems Light Meter
Autoequipmentonline.com / Swis Automotive & Truck Equip.
1-800-971-0924
 2. LASER LABS
Laser-labs.com
1-800-452-2344
 3. Laser Labs 200
Tools Unlimited, Salt Lake City
1-801-487-9839
 4. Pocket Detective Light Meter
PRO MOTOR CAR PRODUCTS
promotorcarproducts.com
1-800-440-3967

SECTION 1 - REGISTRATION

The first step in the inspection of a vehicle is a review of the registration papers. Vehicles with out-of-state registration or vehicles with no registration can be inspected. These requirements apply to passenger cars, light trucks, motorcycles, heavy trucks, trailers, and buses.

A. AGREEMENT AMONG PAPERS

1. Check vehicle registration certificate, identification number on vehicle, license plates and vehicle description for agreement. Record the manufacturers VIN and license plate number on the safety inspection certificate.
 - a. **ADVISE** when:
 - 1) Paperwork disagreements are accidental and clerical in nature.
 - b. **REJECT** when:
 - 1) Registration certificate, identification number, license plate and vehicle description are not in agreement.

****NOTE: Verification of VIN is required on all inspections.***

B. PLATE MOUNTING

1. If the vehicle is registered, inspect the license plates to see that they are securely mounted and clearly visible.
 - a. **ADVISE** when:
 - 1) Plates are not securely fastened, obscured, or cannot be clearly identified.
 - 2) Front plate is not mounted on front end of vehicle.

****NOTE: Utah Law REQUIRES two plates be mounted on every vehicle, EXCEPT apportioned plates, which only have one plate.***

- b. **ADVISE** when:
 - 1) Plates have tinted or colored covers. License plates must be displayed horizontally to be read left to right and visible from 100 feet. (UCA 41-1a-403 and 41-1a-404)

SECTION 2 - TIRES AND WHEELS

Tires are a critical safety item and shall be inspected as follows:

A. TIRE CONDITION

1. Check tires for cuts, cracks or sidewall plugs
 - a. **REJECT** when:
 - 1) Tires have cuts and/or cracks deep enough to expose cords and/or sidewall plugs.
 - b. **ADVISE** when:
 - 1) Tire has weather cracks, but no cords are showing.
2. Check tires for indication of tread separations.
 - a. **REJECT** when:
 - 1) Tires have visible bumps, bulges or knots indicating partial failure or separation of the tire structure.
3. Check tire pressure for proper inflation with tire pressure gauge.
 - a. **REJECT** when:
 - 1) Tires are flat, have noticeable air leak, or are inflated to less than half (50%) of the vehicle manufactures recommended tire pressure.
 - 2) Tire is over inflated.

***NOTE: Special emphasis shall be placed on 12 – 15 passenger vans.**

TIRES AND WHEELS - Continued

B. REGROOVED OR RECUT TIRES

1. Check for specially constructed tires that have under tread rubber for the purpose of regrooving or recutting.
 - a. **REJECT** when:
 - 1) Tires are regrooved and are not identifiable as regroovable.

C. RESTRICTED MARKINGS

1. Tires must be checked for "restricted usage only" markings.
 - a. **REJECT** when:
 - 1) Tires are marked "for farm use only", "off-highway use only", "for racing only", "for trailers only" or other non-highway use.

D. MISMATCHING

1. Check tires for the same size and same type construction. All tires on the same axle must be of the same size and construction.
 - a. **REJECT** when:
 - 1) Tires on the same axle are not the same size or construction.

E. TIRE WEAR

1. Check tire wear.
 - a. **ADVISE** when:
 - 1) Tread wear bars are touching the road surface.
 - b. **REJECT** when:
 - 1) Tread depth is less than 2/32 inch when measured in any two adjacent tread grooves.

TIRES AND WHEELS - Continued

F. WHEELS

1. Check wheels for damage and proper mounting.
 - a. **REJECT** when:
 - 1) Wheel bolts, nuts, studs or lugs are loose or missing.
 - 2) Wheels are bent, cracked, re-welded or have elongated bolt holes.
 - 3) Spacers are used to increase the wheel track width.
 - 4) Bead lock wheels are installed.

****NOTE: Custom wheel adapters are not spacers.***

G. TIRE SIZE, TIRE WIDTH, FENDERS AND MUDFLAPS

1. Check vehicle tires for proper size and weight load ratings.
2. Check that fenders and mud flaps are in place when required. *
 - a. **REJECT** when:
 - 1) Tires do not meet proper load rating per axle as determined by OEM specifications.
 - 2) Tires are mounted on wheels that are not within tire manufacturer specifications.
 - 3) Tire tread is not fully covered by existing fenders or fender extenders.
 - 4) Rear tires do not have the top 50% of the tire covered by mud flaps. *
 - 5) Rear mud flaps are not as wide as the tire. *
 - 6) Tires make contact with any other vehicle parts or accessories.

****NOTE: Mud flaps are required on any vehicle modified from original OEM specifications. This includes larger tires or any alterations to the frame or suspension. 41-6a-1633 UCA.***

TIRES AND WHEELS - Continued

H. STUDDED SNOW TIRES

1. Check for studded snow tires.

- a. **REJECT** when:

- 1) Studded snow tires are mounted on vehicle between April 1 and October 14 of any year.

****NOTE: Studded tires are legal from October 15 through March 31 of each year (UCA 41-6a-1636).***

SECTION 3 - STEERING

The steering system must be inspected to determine if excessive wear and/or maladjustment of the linkage and/or steering gear exist. Vehicle must be on a smooth, dry, level surface. On vehicles equipped with power steering, the engine must be running and the fluid level, belt tension and condition must be adequate before testing.

A. LASH OR FREE PLAY

1. Measure lash at steering wheel.

a. REJECT when:

- 1) Steering wheel movement exceeds:
 - a) Power - 2 inches (51 mm)
 - b) Manual - 3 inches (76 mm)
 - c) Rack and pinion - 0.4 inch (10 mm)

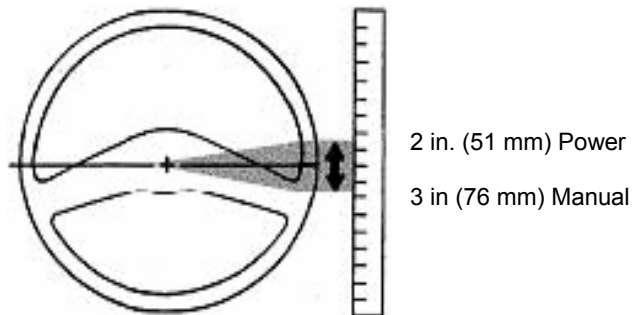


Figure P-1

Steering Lash

B. SIZE

1. Check size of steering wheel.

a. REJECT when:

- 1) Steering wheel is less than 13 inches in outside diameter or is not of full circular construction. (SAE Recommended Practice SAE J287).

STEERING - Continued

C. TRAVEL

1. Turn steering wheel through a full right and left turn and check for binding or jamming conditions.
 - a. **REJECT** when:
 - 1) Steering is incapable of being turned fully from right to left.
 - 2) One wheel turns before the opposite wheel.

D. POWER STEERING

1. Check condition and tension of steering belts.
 - a. **ADVISE** when:
 - 1) Steering belts are cracked or are not properly adjusted.
 - b. **REJECT** when:
 - 1) Belts are frayed or torn.
2. Check the condition of the steering system, hoses, hose connections, cylinders, and valves.
 - a. **REJECT** when:
 - 1) Hoses or hose connections have a dripping leak.
 - 2) Cylinders or valves have a dripping leak.
3. Check the condition of pump. Check for secure mounting and proper fluid level in reservoir.
 - a. **ADVISE** when:
 - 1) Fluid level is below minimum fluid level indicators.
 - b. **REJECT** when:
 - 1) Pump mounting parts are loose or broken.
 - 2) System is inoperative.
 - 3) Reservoirs have a dripping leak.

STEERING - Continued

E. STEERING COLUMN

1. Check for separation of shear capsule from bracket and general "looseness" of wheel and column.
 - a. **REJECT** when:
 - 1) Shear capsule is separated from bracket.
 - 2) Wheel and column can be moved as a unit.
2. Check movement on "tilt" steering wheels.
 - a. **REJECT** when:
 - 1) Adjustable steering wheel cannot be secured in all positions.
 - 2) Steering column has 3/4 inch or more movement at the center of the steering wheel when locked in position.

F. IDLER ARMS AND TIE RODS

1. Check the idler arms and tie rod ends for looseness in excess of OEM specifications.
 - a. **REJECT** when:
 - 1) Has looseness in the tie rod ends in excess of OEM specifications.
 - 2) Tie rod grease seals are cut, torn or otherwise damaged to the extent that lubricant will not be retained.
 - 3) The tie rod is bent causing the vehicle to be out of alignment.

STEERING - Continued

G. RACK AND PINION

1. A thorough inspection of the complete system is needed.
 - a. **REJECT** when:
 - 1) Has any looseness in excess of OEM specifications.
 - 2) Has any looseness in the tie rod ends in excess of OEM specifications.
 - 3) Has a dripping leak.

H. GEARBOX

1. Check steering gear box for proper function.
 - a. **REJECT** when:
 - 1) Has looseness at frame or mounting.
 - 2) Has cracks.
 - 3) Mounting brackets are cracked.
 - 4) Fasteners are missing.
 - 5) Has a dripping leak.

6) Any welded repair is present.

****NOTE: Manual Steering is an ADVISE when the gear box has a dripping leak***

I. PITMAN ARM

1. Check pitman arm.
 - a. **REJECT** when:
 - 1) Gearbox output shaft has movement inside pitman arm.
 - 2) Any welded repair is present.

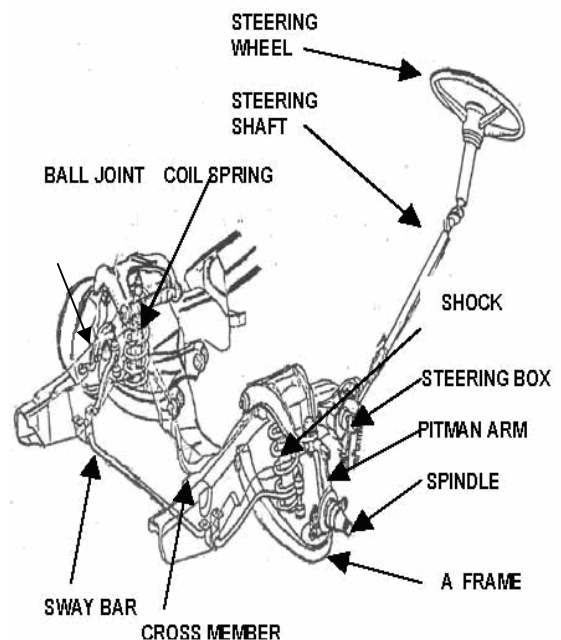


Figure P-2

STEERING - Continued

J. WHEEL BEARINGS

1. Check all wheel bearings for looseness.

With the front end of the vehicle lifted, grasp the top and bottom of the tire, rock tire in and out to determine looseness.

a. REJECT when:

- 1) Has bearing movement of more than 1/8 inch (measured at the outer circumference of tire).

K. COTTER PINS

1. Check steering components and axle nuts for required cotter pins.

a. REJECT when:

- 1) Cotter pins are missing or ineffective.

SECTION 4 - SUSPENSION

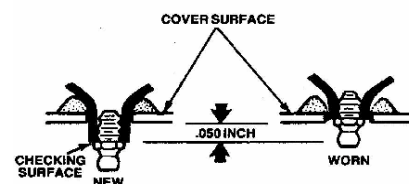
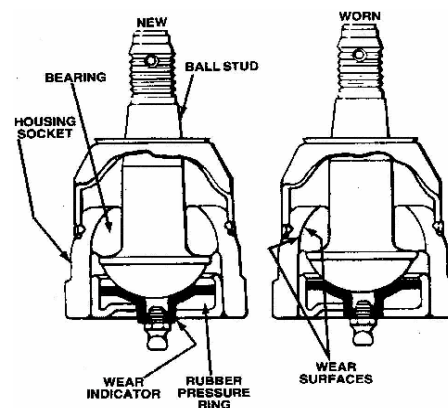
- Inspection of ball joints on models prior to 1973 must be conducted with the joints unloaded.
- After 1973 some manufacturers provide wear indicating ball joints that allow for a visual inspection while the joints are loaded.
- If there are any questions on a vehicles proper inspection, verify the specifications with Original Equipment Manufacture (OEM).
- In checking for motion of ball joints, keep in mind that the load carrying joints must be UNLOADED, and a pry bar pressure sufficient only to lift the weight of the wheel assembly is applied.
- If the inspector uses the "leverage" of a pry bar to exert excessive pressure, he can easily "force" an apparent ball joint movement and get a false reading.
- Sagging springs, broken torsion bars, worn or deteriorated bushings, loose or missing U-bolts can cause vehicle handling instability and brake pull.

A. VEHICLES WITH WEAR INDICATING BALL JOINTS

1. Support vehicle with ball joints loaded and wheels straight ahead. Wipe grease fitting and check that surface is free of dirt and grease. Determine if checking surface extends beyond the surface of the ball joint cover.

a. REJECT when:

- 1) Ball joint wear indicator is flush or inside the cover surface.
(See Figure. P-4)
- 2) Ball joint seals are cut, torn or otherwise damaged to the extent that they will not retain lubricant.
(See Figure P-4)



BALL JOINT WEAR INDICATOR

Wear is indicated by the protrusion of the $\frac{1}{2}$ " diameter boss, (exaggerated for illustration) into which the grease fitting is threaded for greaseable ball joints. This same boss exists and should be used to indicate wear in non-greaseable ball joints. This round boss projects .050" beyond the surface of the ball joint cover on a new, unworn joint.

To inspect for wear, support vehicle by wheels so that the lower ball joints are in a loaded condition. Wipe the grease fitting or boss free of dirt and grease. Observe or scrape a scale, screwdriver or fingernail across the cover. If the grease fitting boss is flush or inside the cover surface reject vehicle.

B. VEHICLES WITHOUT WEAR INDICATING BALL JOINTS

1. Unload the ball joints by raising the vehicle, depending on the construction of the suspension system.

a. **REJECT** when:

- 1) Ball joint movement is in excess of manufacturer's specifications.

2. Check the ball joint seals.

a. **REJECT** when:

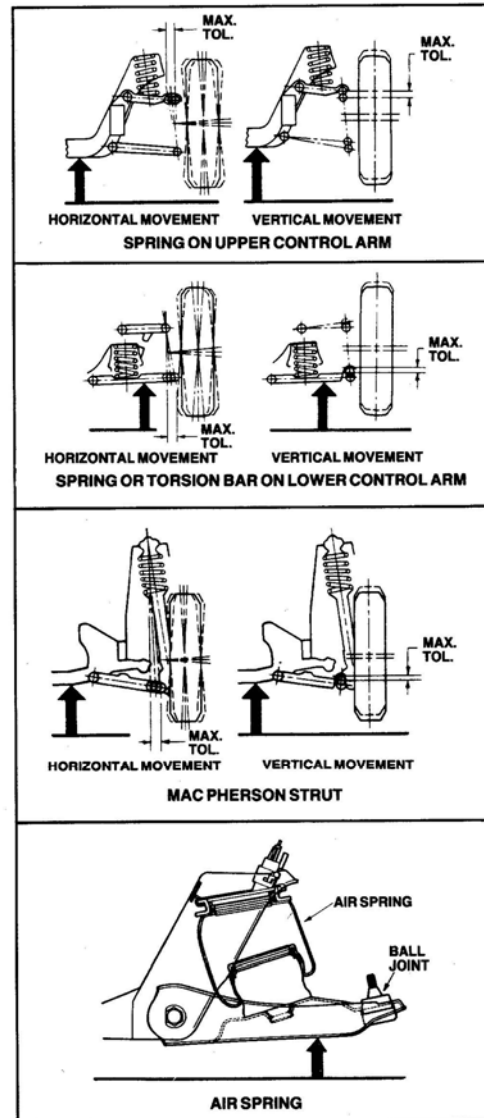
- 1) Ball joint seals are cut, torn or otherwise damaged to the extent that they will not retain lubricant.

C. VERTICAL MOVEMENT

Position a pry bar under the front tire and with a lifting motion, sufficient to overcome the weight of the wheel assembly only, move wheel up and down.

1. **REJECT** when:

a. Ball joint movement is in excess of OEM specifications.



RAISING POSITIONS FOR SUSPENSION SYSTEMS

Raising Positions for Suspension Systems

Figure P-4

SUSPENSION - Continued

D. HORIZONTAL MOVEMENT

1. Grasp the tire and wheel assembly at the top and bottom. Move in and out to detect looseness. (More horizontal movement is allowable because of the nature of most ball joint construction.)

- a. **REJECT** when:

- 1) Movement is in excess of manufacturer's specifications.
(See Figure P-4)

****NOTE: Some manufacturers do not accept horizontal movement as being indicative of ball joint wear.***

E. SPRINGS

1. Visually inspect for broken or damaged leaf springs.

- a. **REJECT** when:

- 1) Springs are cracked, broken, disconnected, or cut.
- 2) Springs are sagging and allow the body to come in contact with the tires.

2. Check the spring shackles.

- a. **REJECT** when:

- 1) Shackles are damaged, loose or have been modified and do not meet or exceed OEM specifications.

3. Check the U-bolts.

- a. **REJECT** when:

- 1) U-bolts are damaged, loose or the bolts are not at a minimum flush with the nut.

4. Check the coil springs.

- a. **REJECT** when:

- 1) Springs are broken or not properly attached.
- 2) Springs have been heated, cut, or otherwise altered from OEM Specifications.

SUSPENSION - Continued

F. SWAY BARS / TORSION BARS / TRACKING COMPONENTS

1. Visually inspect for damage.

- a. **REJECT** when:

- 1) Sway bar(s), torsion bar(s) or any tracking component(s) are loose, cracked, bent or disconnected.

- 2) Bushings are worn, cracked or missing.

G. CONTROL ARMS

1. Look for cracks, bends, or breakage.

- a. **REJECT** when:

- 1) Upper or lower control arms do not meet *OEM specifications i.e., bent, cracked, welded, etc.

2. Check bushings for wear or distortion.

- a. **REJECT** when:

- 1) Bushings are missing, worn, or distorted so that looseness is present.

****NOTE: Sagging springs, broken torsion bars, worn or deteriorated bushings, loose or missing U-bolts can cause vehicle handling instability and brake pull.***

H. MCPHERSON STRUTS (See Figure P-4)

1. Check the spring mounted strut assembly. The strut must be inspected very closely for leakage, shaft binding and poor damping. Moisture or dampness around strut assembly is not cause for rejection.

- a. **ADVISE** when:

- 1) Struts have poor damping, shaft binding, or leakage.

- b. **REJECT** when:

- 1) Has any wear in the upper mount assembly.

- 2) Has any horizontal or vertical movement in the lower shaft mounting area.

SUSPENSION - Continued

I. SHOCK ABSORBERS

1. Visually inspect shock absorbers for looseness of mounting brackets and bolts.
 - a. **ADVISE** when:
 - 1) Vehicle continues free rocking motion after release or shock absorbers are leaking.
 - b. **REJECT** when:
 - 1) Shock absorbers are missing or disconnected.
 - 2) Mounting brackets, bolts, or bushings are loose, broken, or missing.

J. CV AXLE

1. Check CV axle and axle boots.
 - a. **ADVISE** when:
 - 1) CV boots are cracked or torn.
 - b. **REJECT** when:
 - 1) CV joint makes popping or clicking noise while turning during test drive and CV boot is cracked or torn.

K. U-JOINT

1. Check U-Joints for wear.
 - a. **ADVISE** when:
 - 1) Wear is found in U-Joint.

SECTION 5 - ALTERED VEHICLES

A. RECONSTRUCTED / SALVAGED MOTOR VEHICLES

1. Check the suspension.

a. **REJECT** when:

- 1) Components and suspension systems are not made and installed in accordance with applicable provisions for the particular chassis from the original manufacturer.

B. LOWERING VEHICLE

1. All replacement parts and equipment shall be equal to or greater in strength and durability than the OEM parts. (Utah Lift Law UCA 41-6a-1631)

a. **REJECT** when:

- 1) Chassis or suspension components are less than three inches above the ground, excluding tires, rims or mud flaps.
- 2) Body or chassis contacts the roadway.
- 3) Fuel tank is exposed to damage without a skid plate.
- 4) Exhaust system brackets are not secure.
- 5) Exhaust system is less than three (3) inches above the ground.
- 6) Wheels or tires make contact with the body.
- 7) Tire tread is not fully covered by existing fenders or fender extenders.
- 8) Braking, steering, or suspension is modified, disconnected, or changed in any manner that may impair the safe operation of the vehicle.
- 9) Main springs or shocks have been removed to accommodate a hydraulic or air suspension system.
- 10) Headlamps are less than 22 inches from the ground, measured from the ground to the center of the low beam.

ALTERED VEHICLES - Continued

C. RAISING VEHICLES

1. Check the braking and steering system components.
 - a. **REJECT** when:
 - 1) Braking or steering systems have been altered, modified, disconnected or changed in any manner that may impair the safe operation of the vehicle.
2. Check vehicle lift. (Utah Lift Law UCA 41-6a-1631)
 - a. **REJECT** when:
 - 1) Frame height is greater than 24 inches on a vehicle with a GVWR less than 4,500 lbs.
 - 2) Frame height is greater than 26 inches on a vehicle with a GVWR of 4,500 lbs. and less than 7,500 lbs.
 - 3) Frame height is greater than 28 inches on a vehicle with a GVWR of 7,500 lbs. or more.

****NOTE: Vehicle must be on a flat surface and unladen for all measurements. Frame height measurement is from the ground to the bottom of the frame and should be taken on the left side of the vehicle under the driver's seat. If the door certification plate has been removed, the vehicle shall be considered to be 4,500 lbs.***
3. Check the body lift above the frame. (Title 41-6a-1631 UCA)
 - a. **REJECT** when:
 - 1) Lowest part of body floor is raised more than 3" above top of frame.
4. Check vehicle for front and rear axle blocks. (UCA 41-6a-1630)
 - a. **REJECT** when:
 - 1) Axle blocks have been added to the front axle.
 - 2) There are stacked blocks on the rear axle. The stacking of axle blocks is prohibited. (UCA 41-6a-1631(g))
 - 3) There are stacked frames.

ALTERED VEHICLES - Continued

5. Check vehicle wheel track. (UCA 41-6a-1631)

a. **REJECT** when:

- 1) Tire tread protrudes beyond the original fender or fender extenders.

***NOTE: Fender flares or fender extenders are required to cover both front and rear tires when wheel track extends beyond the vehicle body.**

- 2) Spacers are used to increase wheel track width.

***NOTE: Custom wheel adapters are not spacers.**

6. Check for mud flaps when vehicle has been altered. Mud flaps are required on the rear wheels of all vehicles that are altered from their original OEM specifications. This includes the addition of larger tires and suspension lift kits. (UCA 41-6a-1633)

a. **REJECT** when:

- 1) Fenders do not cover the top 50% of the tire
- 2) Mud flaps are not present when required.
- 3) Rear mud flaps are not as wide as the tire.

***NOTE: From the rear, mud flaps must hang down to the center of the axle.**

7. Check for headlamp height

a. **REJECT** when:

- 1) Headlamp exceeds 54 inches in height measured from the ground to the center of the low beam.

SECTION 6 - BRAKES

A. PROCEDURE FOR PLATE BRAKE TESTERS

1. Station owner/operators are not required to use a computerized brake testing device as a mandatory piece of inspection equipment; however, when used in the Safety Inspection Program stations/inspectors are required to:
 - a. Follow equipment manufacturer procedures for testing.
 - b. Be certified by the equipment manufacturer and/or an authorized agent of the Utah Highway Patrol Safety Inspection Section. Inspector certifications must be renewed every three years.
 - c. Display, in a prominent location, their inspector certification card for the equipment being used.
 - d. Display, in a prominent location, the computerized brake testing equipment certification. The manufacturer must certify equipment yearly.
 - e. Pull two wheels upon the failure of the brake plate test to check brake components. Vehicles that have adequate pad and or shoe thickness must still be rejected until repairs are made.
 - f. Do a visual two-wheel inspection of brake components when requested by a customer.
 - g. Display the following sign in a conspicuous location. The sign must be 14" X 24." Lettering will be one inch in vertical height and no less than one quarter of an inch in width and display the following statement:

Station #1

Station Name

Uses a computerized plate brake tester to inspect the braking system efficiency of the vehicle presented for an inspection. This test does not measure lining thickness or condition of the drum / rotor.

However, at the customers' request we will pull two wheels for a visual check, per State of Utah Safety Inspection requirements.

BRAKES - Continued

- h. If failed on a plate brake tester, the vehicle must pass safety inspection on plate brake tester.
- 2. When a visual inspection is performed, it is required that at least one front and one rear wheel be removed for a brake inspection on all vehicles less than 10,000 lbs. GVWR. Always inspect brake drum, linings, pads, discs, calipers and the condition of all mechanical components.
- 3. Vehicles over 10,000 lbs. GVWR are not required to have wheels pulled if the vehicle is equipped with inspection ports/slots (adjustment slots are not adequate for inspecting brakes) or if the vehicle has open brake drums.

B. HYDRAULIC SYSTEM

- 1. Test pedal reserve. (See Figure P-5)
 - a. **REJECT** when:
 - 1) Has less than 1/5 (20%) of the total available pedal travel when the brakes are fully applied. Exceptions for 1987, 88 and 89 Oldsmobile Toronado, early Ford normally aspirated diesels on some 70's, 80's, 90's models.

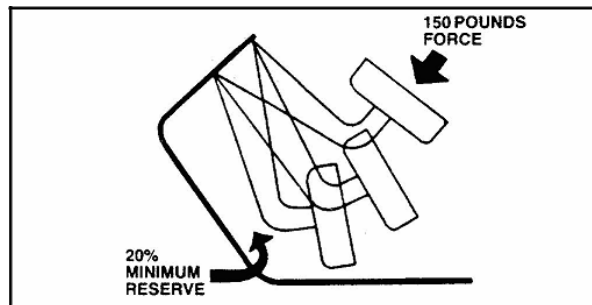


Figure P-5

Pedal Travel and Feel

- 2. Check the wheel cylinders for leakage.
 - a. **REJECT** when:
 - 1) Wheel cylinders leak.

DO NOT DISTURB DUST BOOT

BRAKES - Continued

3. Inspect hydraulic hoses and tubes for exposed fabric cord, flattened, restricted or unsecured lines.

- a. **REJECT** when:

- 1) Hoses or tubing are cracked, leaking or show exposed fabric cord, flattened, restricted, or are unsecured.

****NOTE: Brake hoses must be DOT approved and cannot be altered.***

4. Inspect master cylinder for leakage and fluid level.

- a. **REJECT** when:

- 1) Master cylinder leaks, or fails to operate properly.
- 2) Master cylinder is below the add line or less than 3/4 full.
- 3) Master cylinder gasket is damaged.

C. DUAL HYDRAULIC CIRCUITS

1. Check vehicles equipped with a brake warning light. Test for operation of light.

- a. **REJECT** when:

- 1) Warning light remains illuminated or comes on when brake pedal is depressed.
- 2) Warning light does not operate when required. (Turn key to on position to check).

D. HYDRAULIC SYSTEM WITH VACUUM ASSIST

1. Check the condition of vacuum system for collapsed, broken, badly chafed and improperly supported tubes and loose or broken hose clamps.

- a. **REJECT** when:

- 1) Hoses, tubes, or booster is leaking.
- 2) System is collapsed, broken, badly chafed or showing metal or fabric cord.
- 3) System is improperly supported or loose.
- 4) Hoses or tubes are exposed to damage from excessive heat, debris or rubbing.

BRAKES - Continued

2. Determine if system is operating.

First, turn off engine. Second, depress brake pedal several times to deplete all vacuum in the system. Third, while maintaining pedal force, start engine and observe if pedal falls slightly when engine starts.

- a. **REJECT** when:

- 1) Service brake pedal does not fall slightly as engine is started and while pressure is maintained on pedal.

E. HYDRAULIC BOOSTER SYSTEM WITH VACUUM ASSIST

1. Check the integrated Hydraulic Booster

With the ignition key in the off position, depress brake pedal a minimum of 25 times (50 times on jeeps with anti-lock brakes) to deplete all residual stored pressure in the accumulator. Depress pedal with a light foot-force (25 lbs.). Place the ignition key in the on position and allow 60 seconds for the brake warning lights to go out indicating the electric pump has fully charged the accumulator.

- a. **REJECT** when:

- 1) Brake pedal does not move down slightly as the pump builds pressure.
- 2) The brake warning lights remain on longer than 60 seconds.

2. Check the braking system, while fully charged, for leaks and proper fluid levels.

- a. **REJECT** when:

- 1) Fluid reservoir is below the add line or more than 3/4 inch below the top of the reservoir.
- 2) Has broken, kinked or restricted fluid lines or hoses.
- 3) Has any leakage of fluid at the pump or brake booster, or any of the lines or hoses in the system.

BRAKES - Continued

F. BRAKE DRUMS

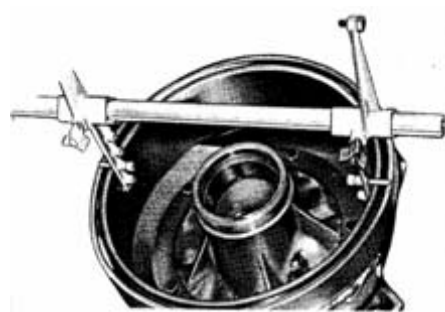
1. Check the condition of the drum friction surface for substantial cracks, damage and contamination. (Short hairline heat cracks should not be considered).
 - a. **REJECT** when:
 - 1) Has substantial cracks on the friction surface extending to the open edge of the drum.

2. Check for cracks on the outside of drum.

- a. **REJECT** when:

- 1) Brake drums have external cracks.

***NOTE: Short hairline cracks should not be considered.**



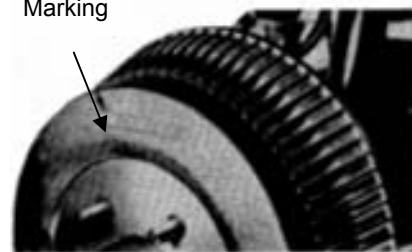
Measure inside diameter of drum

3. Check for mechanical damage.

- a. **REJECT** when:

- 1) There is evidence of mechanical damage other than wear.

Maximum Diameter
Marking



Drum diameter marking

4. Check for leaks at all grease or oil seals.

- a. **REJECT** when:

- 1) Leakage of oil, grease or brake fluid contaminate brake components.

5. Check drum diameter.

- a. **REJECT** when:

- 1) Drum is turned or worn beyond manufacturer's specifications

Figure P-6

BRAKES - Continued

G. BRAKE ROTORS

1. Check the condition of the rotor friction surface for substantial cracks. (Short hairline heat cracks should not be considered).

- a. **REJECT** when:

- 1) There are substantial cracks on the friction surface extending to open edge of rotor.
 - 2) Friction surface is contaminated with oil or grease.

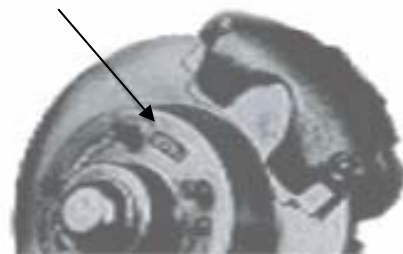


2. Check rotor thickness.

Maximum Thickness Allowed

- a. **REJECT** when:

- 1) Rotor thickness is less than manufacturer's specifications.



H. BONDED LINING & PADS

1. Check the primary and secondary lining thickness at the thinnest point.

Figure P-7

- a. **ADVISE** when:

- 1) Lining thickness is worn to 2/32 inch.

- b. **REJECT** when:

- 1) Lining thickness is worn to less than 2/32 inch.

I. RIVETED LINING & PADS

1. Check for loose or missing rivets.

- a. **ADVISE** when:

- 1) Lining thickness is worn to 2/32 inch above any rivet head.

BRAKES - Continued

2. Check the primary and secondary lining thickness above rivet head by measuring at the thinnest point.

a. **REJECT** when:

1) **Rivets are loose or missing.**

2) Lining thickness is less than 2/32 inch above any rivet head.

***NOTE: Calipers must be removed to accurately measure riveted pads.**

J. ALL LININGS

1. Check for broken or cracked linings.

a. **REJECT** when:

1) Linings are broken, cracked or not firmly and completely attached to shoe.

2. Check for contamination of friction surface.

a. **REJECT** when:

1) Friction surface is contaminated with oil, grease or brake fluid.

***NOTE: Once a brake lining has been contaminated, replacement is required.**

3. Check for uneven lining wear.

a. **ADVISE** when:

1) Lining is uneven or grooved.

K. MECHANICAL BRAKE COMPONENTS

1. Check for missing or defective mechanical components.

a. **REJECT** when:

1) Mechanical parts are missing, broken or badly worn.

BRAKES - Continued

2. Check for frozen calipers, rusted or inoperative components, missing spring clips and defective grease retainers.

a. REJECT when:

- 1) Mechanical parts are frozen, inoperative, missing or defective.

- 2) Backing plate or brake shoe is damaged, restricting free movement of brake shoe.

3. Check for restriction of shoe movement at backing plate and for binding between brake shoe and anchor pins. (Figure P-8)

a. REJECT when:

- 1) Shoes and anchor pins are improperly positioned or misaligned.

L. PARKING BRAKE

1. Check holding ability.

a. REJECT when:

- 1) Parking brake fails to hold vehicle.

2. Check ratchet or the locking device.

a. REJECT when:

- 1) Ratchet, pawl or other locking device fails to hold brake in an applied position.

M. ANTI-LOCK BRAKES (ABS SYSTEM)

1. Check ABS warning light and system for proper operation.

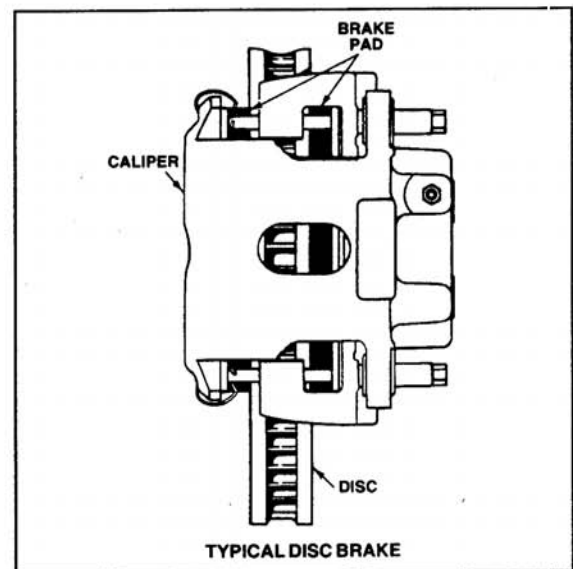
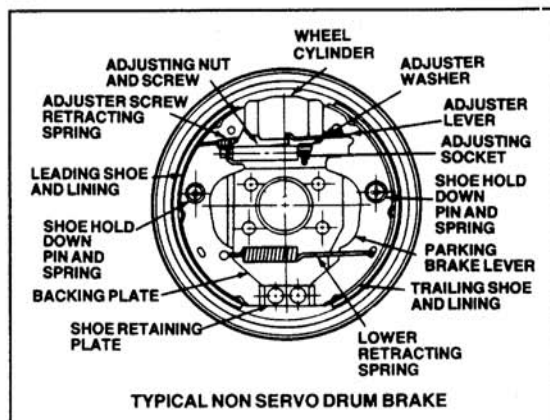
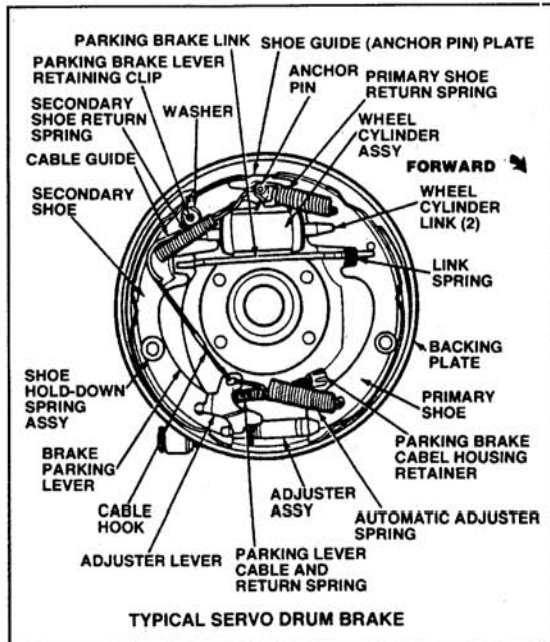
a. ADVISE when:

- 1) ABS light fails to light, fails to shut off after 60 seconds or when 5 rapid beeps are heard when ignition switch is turned to the on position.

- 2) ABS components are broken, missing or disconnected.

BRAKES - Continued

Figure P-8



SECTION 7 - LIGHTING

- **Lenses that are patched, taped or covered with a temporary substance and lenses that have been equipped with any tinted covers MUST BE REJECTED.**
- Lights must conform to manufacturer's specifications, Federal Motor Vehicle Safety Standards (FMVSS) and Utah State Laws.
- In 1996 the use of a clear cover for headlamps was approved for marketing in Utah (See **NOTE** in Headlamps before paragraph "B").
- Xenon bulbs are USDOT approved.

A. HEADLAMPS

1. Check headlamp for proper mounting.
 - a. **REJECT** when:
 - 1) Mounting brackets are loose, missing or damaged in any way so that headlamp cannot be properly and securely mounted.
2. Check headlamp for proper aim.
 - a. **REJECT** when:
 - 1) Headlamps are not aimed to specifications.
3. Check headlamps for proper lighting.
 - a. **REJECT** when:
 - 1) Headlamps fail to light properly.
 - 2) **Headlamps project other than white light.**

***NOTE: See Headlight Aiming Reference.**

4. Check headlamps for holes and non-factory colored covers or non-transparent covers.
 - a. **ADVISE** when:
 - 1) Headlamp has holes in headlight lens. (These holes may be sealed with silicone).
 - b. **REJECT** when:
 - 1) Headlamp coverings, not authorized by the department, are placed on or in front of any headlamp. Factory installed lights/covers are faded to the point assembly will not comply with state code for visibility at 1,000 feet.

LIGHTING - Continued

***NOTE:** *Impact Headlight Savers Inc. manufactures a clear laminate product that can be attached to a headlight to cover holes or cracks and to help keep the headlight from breakage. The cover does not discolor with age and meets FMVSS standards. The cover is acceptable as a permanent repair and will pass inspection.*

B. HEADLAMPS - HIGH AND LOW BEAMS

1. Check dimmer switch for proper functioning. **Both high and low beams are required to function.**
 - a. **REJECT** when:
 - 1) Dimmer switch fails to work properly.

C. BACKUP LIGHTS / LICENSE PLATE LIGHT

1. Check the backup lights for proper functioning.
 - a. **ADVISE** when:
 - 1) Backup lights or rear license plate lights fail to light.
 - b. **REJECT** when:
 - 1) Backup lights remain illuminated when transmission is not in reverse.

D. HAZARD WARNING LAMPS

1. Check hazard warning lamps for proper functioning.
 - a. **REJECT** when:
 - 1) Hazard warning lamps fail to function properly.

E. INTERIOR INDICATOR LAMPS

1. Check interior lamps for proper functioning.
 - a. **REJECT** when:
 - 1) Turn signal indicators, high beam indicator, brake warning indicator or parking brake indicator fail to function.

LIGHTING - Continued

F. PARKING LAMPS

1. Check parking lamps for proper functioning.

a. REJECT when:

- 1) Parking lamps fail to function properly or display an unapproved color.

G. SIDE MARKER LAMPS (SIDE REFLEX REFLECTORS)

1. Check side marker lamps for proper functioning and color.

a. REJECT when:

- 1) Side marker lamps are not functioning properly.
- 2) Side marker lamps or side reflex reflectors are incorrect color.

****NOTE: Side marker lamps must be yellow or amber on the front and red on the rear. (FMVSS 108)***

H. AUXILIARY LIGHTING

1. Check auxiliary lamps for proper mounting and aiming. Auxiliary lights must be USDOT approved, mounted between 15" and 56" in height, have a separate switch to operate, and may ONLY be white, yellow or amber in color.

a. REJECT when:

- 1) Auxiliary lamps are improperly mounted, aimed and/or fail to direct light properly. (Auxiliary lights may not be aimed higher than the low beam headlight).
- 2) Auxiliary lamps are other than white, yellow or amber.
- 3) Auxiliary lamps are not USDOT approved.

I. TAIL LAMP ASSEMBLY

1. Check tail lamp assembly for proper lenses and required reflex reflectors.

a. REJECT when:

- 1) Rear lenses do not produce red light or are covered by any lens covers.
- 2) Lenses are missing required reflectors.

LIGHTING - Continued

***NOTE: A recent NHTSA interpretation indicates that aftermarket taillight covers create a non-compliance issue with FMVSS 108 (S5.1.3). Also, Utah Code 41-6a-1618 states that lighting devices may not be used if they “tend to change the original design or performance” of the original device.**

2. Check lens covers for breakage.

a. **REJECT** when:

- 1) Tail lamp lenses are broken to the extent that any white light shows through broken area.

***NOTE: Lenses that are patched with another reflective lens piece is an acceptable repair, so long as it is glued on and permanent. Tinted covers and temporary patches MUCH BE REJECTED.**

3. Check for the proper operation.

a. **REJECT** when:

- 1) Tail lamps fail to light properly.

4. Check for proper mounting.

a. **REJECT** when:

- 1) Lamps are not securely mounted.

5. Check for visibility.

a. **REJECT** when:

- 1) Lamps are not visible from a distance of 500 feet in normal light.

J. STOP LAMPS

1. Check stop lamps for proper color.

a. **REJECT** when:

- 1) Stop lamp lenses are not red in color. (**Blue dot taillights are illegal**).

2. Check the stop lamps for breakage.

a. **REJECT** when:

- 1) Stop lamp lenses are broken to the extent that white light is visible to the rear.

LIGHTING - Continued

***NOTE: Lenses that are patched with another reflective lens piece is an acceptable repair, so long as it is glued on and permanent. Tinted covers and temporary patches MUCH BE REJECTED.**

3. Check for the correct operation of stop lamps.

a. **REJECT** when:

1) Stop lamps fail to light properly.

4. Check for proper stop lamp mounting.

a. **REJECT** when:

1) Stop lamps are not securely mounted.

5. Check the visibility of stop lamps.

a. **REJECT** when:

1) Stop lamps are not visible from a distance of 500 feet in normal light.

2) LED lights have less than 50% of diodes illuminated.

6. Check center high mounted stop lamp. (Required on all passenger cars after September 1985 and pickup trucks after September 1993. This includes pickup trucks with a camper shell). 49 CFR 571.108

a. **REJECT** when:

1) Center high mounted stop lamp is not present or does not light.

2) If any after market tint has been applied over the center high mounted stop lamp.

3) LED lights have less than 50% of diodes illuminated.

***NOTE: Some passenger vans and SUV's manufactured prior to 2003 may have center brake lights mounted under AS-3 privacy glass. These vehicles pass safety inspection as long as no aftermarket tint has been applied to the glass.**

K. TURN SIGNAL OPERATION

1. Check the turn signals on all vehicles manufactured in 1956 and later.

a. **REJECT** when:

1) Vehicle is not equipped with proper signals.

LIGHTING - Continued

2. Check switch for proper functioning.
 - a. **ADVISE** when:
 - 1) Switch does not cancel automatically for 1956 and later vehicles.
 - b. **REJECT** when:
 - 1) Turn signal lever needs to be held in the on position.
3. Check for broken lenses.
 - a. **REJECT** when:
 - 1) Turn signal lenses are broken or missing.

****NOTE: Lenses that are patched with another reflective lens piece is an acceptable repair, so long as it is glued on and permanent. Tinted covers and temporary patches MUCH BE REJECTED.***

4. Check for proper mounting.

- a. **REJECT** when:
 - 1) **Turn signals are not securely mounted.**
5. Check for proper color of lenses and bulbs.
 - a. **REJECT** when:
 - 1) Turn signal colors are not red, yellow or amber in the rear or amber in the front.
6. Check for visibility of lenses.
 - a. **REJECT** when:
 - 1) Turn signals are not visible from a distance of 100 feet in normal light.

****NOTE: Lamps must be located at the same level and as widely spaced laterally as is practical.***

LIGHTING - Continued

L. LIGHTING-GENERAL REQUIREMENTS ON ALL VEHICLES

Equipment required at the time the vehicle was manufactured to meet FMVSS 108.

***NOTE: No light colors other than those described on the chart are allowed. Neon lights are not acceptable. Xenon headlight bulbs are acceptable.**

LIGHT	LOCATION	HEIGHT	COLOR	NUMBER
Headlamp (not required on trailer)	Front	22" - 54"	White	2 or 4
Tail lamp	Rear	15" - 72"	Red	2 or more
Turn Signal Lamp (not required on truck-tractor if front turn signals are double-faced and visible from the rear)	Front (not less than 4" from low-beam headlamp- SAE J 588e) Rear	15" - 83" 15" - 83"	Amber Red or Amber	2 or more 2 or more
Hazard Lamp (same lamp as turn signal)	Front Rear	15" - 83" 15" - 83"	Amber Red or Amber	2 or more 2 or more
Stop Lamp	Rear	15" - 72"	Red	2 or more
License Plate Lamp	Rear, at license plate	----	White	1 or more
Side Marker Lamp (not required on truck-tractor)	Side near front Side near rear	15" minimum 15" minimum	Amber Red	1 each side 1 each side
Backup Lamp (not required on trailer)	Rear	----	White	1 or more
Rear Reflector	Rear	15" - 60"	Red	2 or more
Side Reflector (not required on truck-tractor)	Side near front Side near rear	15" - 60" 15" - 60"	Amber Red	1 each side 1 each side
Intermediate Side Lamp (if vehicle overall length is 30' or greater)	Side near center	15" minimum	Amber	1 each side
Intermediate Side Reflector (if vehicle overall length is 30' or greater)	Side near center	15" - 60"	Amber	1 each side

LIGHTING - Continued

In addition to the above chart, the following lights are required on all vehicles 80" wide or wider.

LIGHT	LOCATION	HEIGHT	COLOR	NUMBER
Parking Lamp (only if vehicle is less than 80" wide)	Front (not required on trailer)	15" - 72"	Amber or White	2 or more
Identification Lamp	Front, spaced 6"-12" on center (not required on trailer)	As high as practical	Amber	3
	Rear (not required on truck-tractor)	As high as practical	Red	3
Clearance Lamp	Front, at widest point	As high as practical	Amber	2
	Rear, at widest point (not required on truck-tractor)	As high as practical	Red	2

LIGHTING - Continued

M. HEADLAMP AIMING REFERENCE

1. HEADLAMPS - HIGH AND LOW BEAMS

- a. Vehicle must be tested on a level surface. Always adjust lights to a setting of 0-0 when using a mechanical aimer.
- b. Check headlamps by attaching mechanical aimer to lamps and take readings. (Limits are in inches.)

c. REJECT when:

- 1) Horizontal aim is more than:
 - a) 4 inches to the LEFT or
 - b) 4 inches to the RIGHT
- 2) Vertical aim is:
 - a) higher than 4 inches UP or
 - b) lower than 4 inches DOWN

- 3) Vehicles headlamps are lower than 22 inches or exceed 54 inches, measured from the ground to the center of the low beam.

***NOTE: A mechanical aimer should be used according to the manufacturer's instructions and must be calibrated to the slope of the floor on which the vehicle stands. Headlamp aiming by the screen method requires a level area in a darkened location, sufficient for the vehicle and an additional 25 feet from lamps to screen.**

- 2. The vehicle MUST be positioned properly in front of the screen. (Limits are in inches at 25 feet.)

LIGHTING - Continued

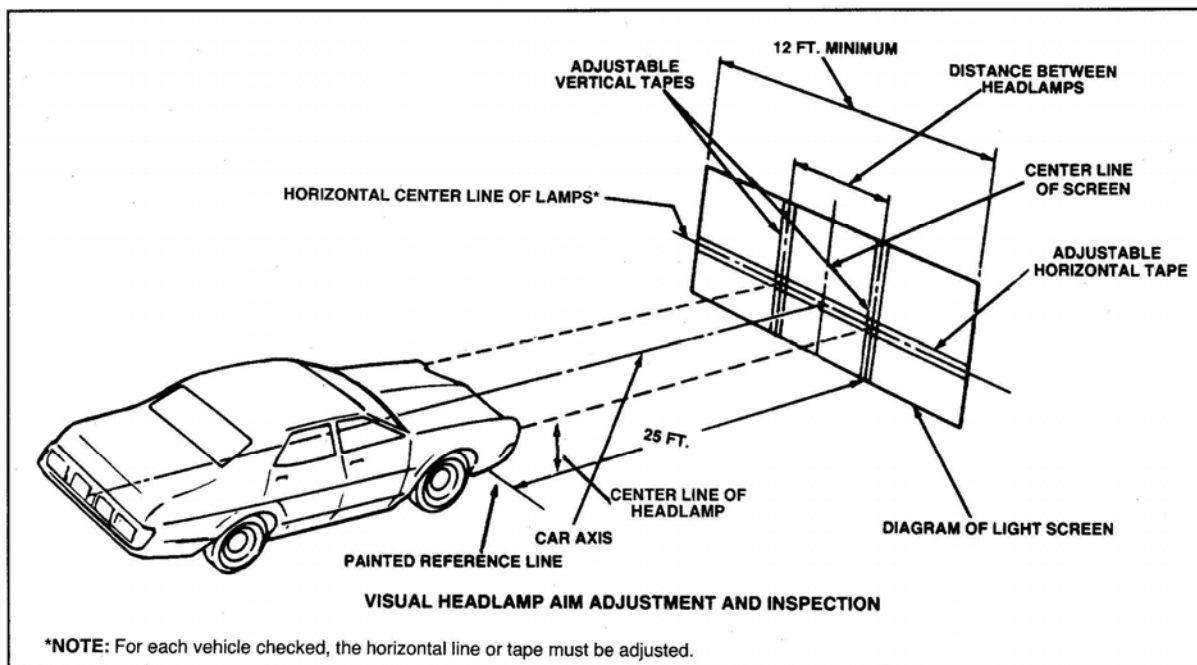


Figure P-9

N. HEADLAMP - AIMING SCREEN

1. With the vehicle properly located and loaded, switch headlamps to high beam and observe center of high intensity zone on screen.
 - a. **REJECT** when:
 - 1) Center is:
 - a) More than 4 inches RIGHT or
 - b) More than 4 inches LEFT of straight ahead.
 - 2) Vertically is:
 - a) More than 4 inches ABOVE or
 - b) More than 4 inches BELOW the horizontal line.

LIGHTING - Continued

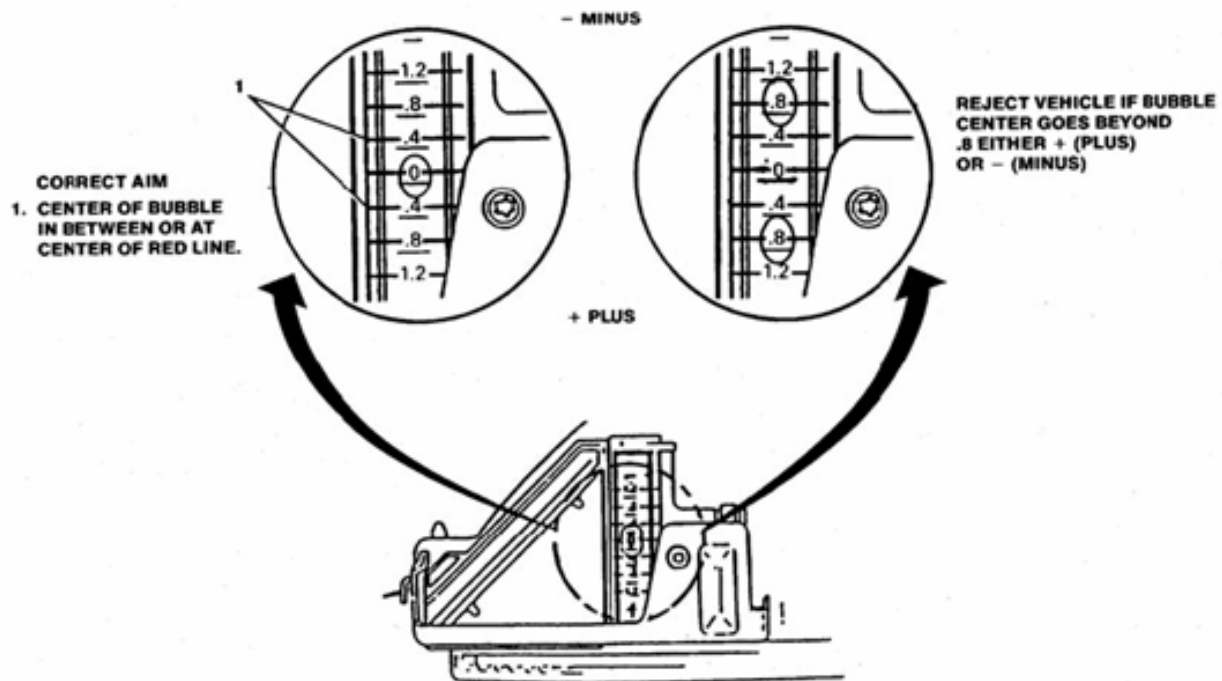


Figure P-10

VHAD Vertical Aim

O. HEADLAMP AIMING-ON-BOARD DEVICE

1. On vehicles equipped with V.H.A.D., aiming and aim checks may be performed on the vehicle if the vehicle is placed on a level surface. Preparation of the vehicle is similar to other aiming methods as far as loading and physical condition of vehicle.

SECTION 8 - ELECTRICAL SYSTEM

A. ELECTRICAL ITEMS

1. Check the horn.
 - a. **REJECT** when:
 - 1) Horn is not securely fastened.
 - 2) Horn does not function properly (must be audible under normal conditions at a distance of not less than 200 feet).
2. Check the electrical switches and wiring.
 - a. **ADVISE** when:
 - 1) Electrical switches fail to function as designed for OEM required equipment.
 - 2) Connections show signs of corrosion.
 - 3) Permanent connection wires are not soldered and/or insulated.
 - b. **REJECT** when:
 - 1) Wiring insulation is worn or rubbed bare.
3. Automatic Transmission Only. Check neutral starting switch to determine that the starter operates only with the gear selector in "P" or "N".
 - a. **REJECT** when:
 - 1) Starter operates in any gear other than "P" or "N".

SECTION 9 - VEHICLE WINDOWS

Automotive Safety Glazing is marked with the manufacturer's trademark and the letters "AS" followed by a number 1 to 14. 1966 and later models also have model and D.O.T. numbers. Windshields must be marked AS1, AS10 or AS14. **A WINDSHIELD IS REQUIRED ON ALL VEHICLES, EXCEPT MOTORCYCLES.**

Glazing Position Markings for Passenger Cars			
(This chart excerpted from ANSI Standard 26.1 Table A1)		Glazing Material Applicable When Marked With "AS" Designation Indicated Below	
		At Levels Requisite for Driving Visibility	At Levels Not Requisite for Driving Visibility*
Passenger Cars	Windshields	1, 10	1*, 10*
	Interior Partitions, Auxiliary Wind Deflectors	1, 2, 4, 10, 11	1,2,3,4,5,10,11
	Openings in Roofs Not Required for Driving Visibility	1,2,4,6,10,11	1,2,3,4,5,6,7,10,11
	<i>All Other Glazing Except as Listed Above</i>	_____	1,2,3,4,5,10,11
Taxicabs	Windshields	1,2,10,11	1,2,3,10,11
		1,10	1*, 10*
	Interior Partitions, Auxiliary Wind Deflectors, Windows in Rear Doors	1,2,4,10,11	1,2,3,4,5,10,11
	Openings in Roofs Not Required for Driving Visibility	_____	1,2,3,4,5,10,11
	Flexible Curtains, Readily Removable Windows, Ventilators Used in Conjunction with Readily Removable Windows	1,2,4,6,10,11	1,2,3,4,5,6,7,10,11
<i>All Other Glazing Except as Listed Above</i>		1,2,10,11	1,2,3,10,11
*Glazing material which is intentionally made so that only a portion of a single sheet has a luminous transmittance of not less than 70 percent will be marked at the edge of the sheet to show limits of the area that may be used at levels requisite for driving visibility. The marks A ↓ S1 or A ↑ S2 etc. will be used with the arrow pointing to the portion of the sheet having a luminous transmittance of not less than 70 percent, and the number indicating the item with which that portion of the sheet complies.			

Figure P-11

VEHICLE WINDOWS - Continued

Windshields are designed to support the roof of a vehicle and to keep the driver and occupants protected in the event of a crash.

Cracks in the windshield may cause a visibility problem. Cracks may be repaired in the acute area when the damage is one inch (1") or less in diameter, a size equal to a quarter coin.

***NOTE: Architectural glass and Plexiglas is prohibited.**

A. WINDSHIELD

1. Check windshield for appropriate AS number.
 - a. **REJECT** when:
 - 1) Windshield does not have AS1, AS10, or AS14 marking.
2. Visually inspect windshield for scratches, etching, or other marks.
 - a. **REJECT** when:
 - 1) Windshield glass is scratched, discolored, clouded or marked to the point vision is obstructed.
 - 2) Windshield has decorative etching that is not OEM.
3. Check windshield for breakage.
 - a. **REJECT** when:
 - 1) Windshield has outright breakage; glass shattered either on the inside or outside surface and/or broken glass leaving sharp or jagged edges.
 - 2) Windshield cloudiness is more than 1 inch in from each side edge, more than 4 inches down from the top edge, or more than 3 inches up from the bottom edge.
 - 3) Damage or repairs in the acute area that is more than 1 inch or larger than the size of a quarter coin.
 - 4) Crack(s) from the 6" border area that extends into the acute area more than 1 inch.

***NOTE: With the new rule regarding the acute area, multiple single cracks may be in the 6" border surrounding the acute area.**

VEHICLE WINDOWS - Continued

5. Check for unauthorized tinting, signs, posters or other non-transparent materials.
 - a. **REJECT** when:
 - 1) Windshield allows less than 70% light transmittance and signs, posters, or any other non-transparent materials are **MORE THAN 4 inches down** from the top edge of the molding on the windshield where the glass and molding meet or at the top of the AS 1 ↓ line, whichever is lower.

****NOTE: All measurements are taken on the outside of glass from the edge where the glass and the molding meet.***

VEHICLE WINDOWS - Continued

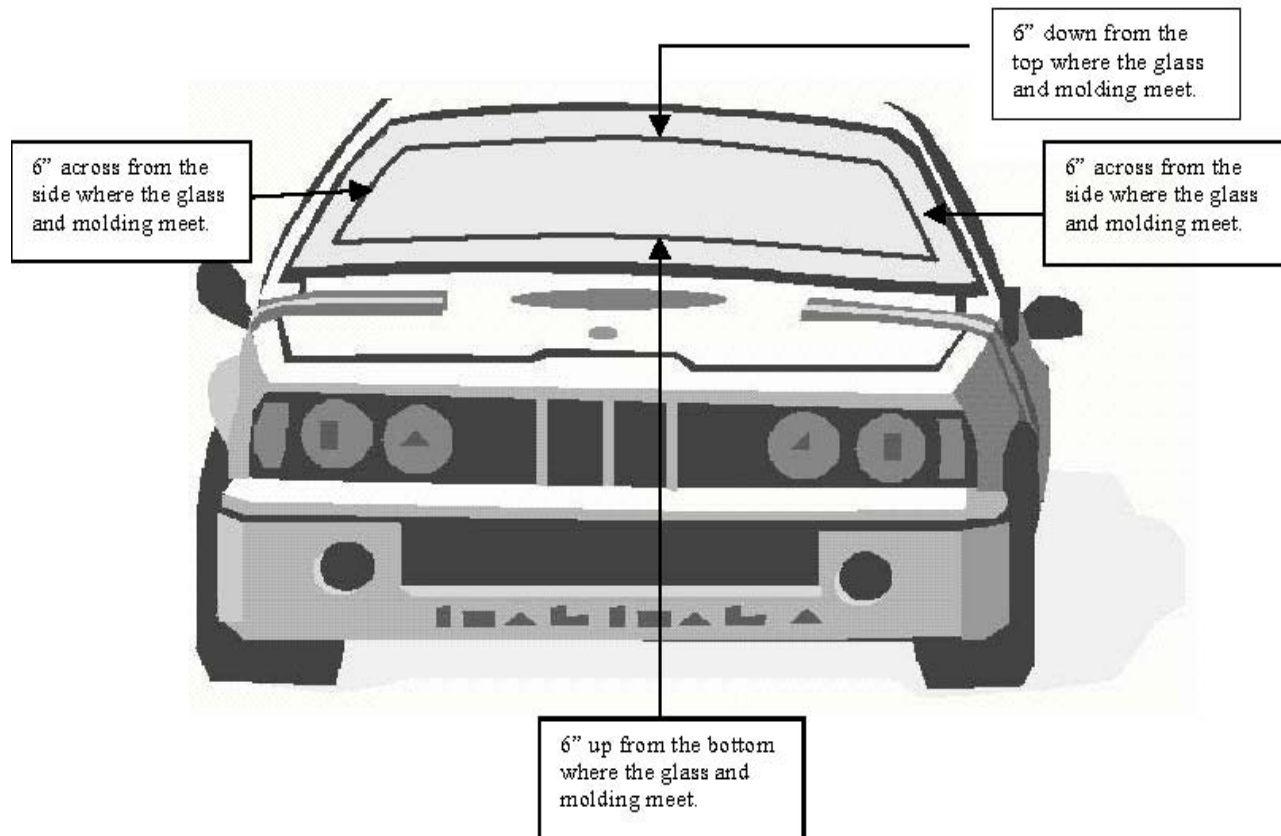


Figure P-12

The acute area (measured on the outside) of the windshield is defined vertically by measuring six inches (6") down from the top edge of glass where it meets the molding, six inches (6") up from the bottom edge of glass where it meets the molding. Horizontally, by measuring six inches (6") in from the left side edge of glass where it meets the molding and six inches (6") in from the right side edge of glass where it meets the molding.

WHEN THERE IS ANY DAMAGE WITHIN THE ACUTE AREA, LARGER THAN ONE INCH (1") THE WINDSHIELD WILL BE REJECTED.

VEHICLE WINDOWS - Continued

B. WINDSHIELD DEFROSTER

1. Turn on windshield defroster fan switch and inspect for heated air blowing over the inside of the windshield.
 - a. **REJECT** when:
 - 1) Defroster fan fails to function or fan functions but a stream of heated air cannot be felt blowing against the proper area of the windshield. (Engine must be warm and all elements of the defroster system must be on).

****NOTE: Vehicles manufactured after January 1, 1969 must be equipped with a windshield defroster system.***

C. WINDSHIELD WIPERS

1. Check for satisfactory operation. (If vacuum operated, engine must be idling.)
 - a. **REJECT** when:
 - 1) Wipers fail to function properly, or return to the park position.
 - 2) When vehicle was originally equipped with two windshield wipers, both must function properly.

****NOTE: Two or more speed system is required after January 1968.***

2. Check wiper blades for damaged, torn or hardened rubber elements.
 - a. **REJECT** when:
 - 1) Wiper blades show signs of physical breakdown of rubber wiping element.
3. Check for damaged metal parts of wiper blades or arms.
 - a. **REJECT** when:
 - 1) Wiper blades or arms are missing or damaged to the extent they do not function properly.

VEHICLE WINDOWS - Continued

4. Check for proper contact of blades with windshield.
 - a. **REJECT** when:
 - 1) Wiper blade arms stop in drivers view or the blade fails to contact the windshield firmly.

****NOTE: Rear window wipers are optional and do not need to work.***

D. WINDSHIELD WASHERS (49 CFR 571-104)

1. Check for proper operation of hand or foot control and that an effective amount of fluid is delivered to the windshield.
 - a. **REJECT** when:
 - 1) System fails to function properly.

E. LEFT/RIGHT FRONT WINDOWS-ALL VEHICLES

1. Check operation of window at drivers left side and right side.
 - a. **ADVISE** when:
 - 1) Left front window cannot be readily opened to permit arm signals, even though vehicle is equipped with mechanical turn signals.
2. Check the windows to the left and right of driver for tinting or shading, scratches, discoloration and/or cloudiness.
 - a. **ADVISE** when:
 - 1) Side windows are scratched, discolored or clouded but the driver's view of the side mirrors is not obstructed.

VEHICLE WINDOWS - Continued

b. REJECT when:

- 1) Has any tinting, or non-transparent material added to the window(s) to the immediate left or right of the drivers' seat that allows less than 43% light transmittance. (Front left/right windows).
- 2) Front left and right side windows are scratched, discolored, clouded or etched with other than OEM markings to the point where the drivers' view of the side mirrors is obstructed.
- 3) Right side mirror is missing or broken when any window is tinted.
- 4) Windows are covered by or treated with a material, which presents a metallic or mirrored appearance when viewed from the outside of the vehicle.

3. Check the windows to the left and right of the driver for breakage.

a. REJECT when:

- 1) Glass is broken, shattered or jagged.

4. Check the wind deflector's (bubbles) when present on some vehicles.

a. REJECT when:

- 1) Wind deflector is tinted to allow less than 43% light transmittance, or when deflector and window are both tinted to allow less than 43% light transmittance.

****NOTE: This applies only to wind deflectors on the front left and right windows of the driver, which block visibility to the left and/or the right mirror.)***

F. WINDOWS BEHIND DRIVER – ALL VEHICLES

1. Check windows behind the driver for tinting or for material that presents a metallic or mirrored appearance.

a. REJECT when:

- 1) Windows are covered by or treated with a material, which presents a metallic or mirrored appearance when viewed from the outside of the vehicle.

VEHICLE WINDOWS - Continued

2. All windows behind the driver do not have window tint limits. If aftermarket window tint is on the rear window, the center high mounted brake light CANNOT be covered.

***NOTE: Window tint law changed May 2002 to allow tint on windows behind driver to be as dark as desired.**

a. **REJECT** when:

- 1) Glass is broken, shattered or jagged.
- 2) Windows do not meet AS standards.
- 3) Center high mounted brake light is covered with aftermarket window tint or is not visible.
- 4) Has tint that shows a metallic or mirrored appearance.

***NOTE: Some passenger vans and SUV's manufactured prior to 2003 may have center brake lights mounted under AS-3 privacy glass. These vehicles pass safety inspection as long as no aftermarket tint has been applied to the glass. (See standards list in Figure P-11)**

3. Check for left and right outside rearview mirror.

a. **REJECT** when:

- 1) Missing a left (OEM) required rearview mirror.
- 2) Missing the right outside rearview mirror, which is required on vehicles with any tint. Right outside rearview mirrors are optional on vehicles with no tint.

***NOTE: All vehicles with window tint must have a left and right side mirror. Right side mirrors are an option on passenger vehicles that do not have any tint. Right side mirrors are required on all trucks and MPV's**

SECTION 10 - BODY

A. PROTRUDING METAL

1. Check for torn metal parts, moldings, etc. which may protrude from vehicle.
 - a. **REJECT** when:
 - 1) Torn metal, glass or other loose or partially dislocated parts are protruding from the surface of the vehicle.

B. BUMPERS

1. Check bumpers to make sure that they meet OEM Specifications in vertical height, and are centered on the vehicle's centerline. Bumpers must be connected securely to the vehicle frame, and extend the entire width of the vehicle wheel track.
 - a. **REJECT** when:
 - 1) Bumpers are not 4.5 inches in vertical height.
 - 2) Bumpers do not extend to the entire width of original body wheel track.
 - 3) Bumpers are missing, improperly attached, broken, or have portions protruding which create a hazard.
 - 4) Bumpers are not made from a material that is strong enough to effectively transfer impact.

***NOTE:** *Pickup trucks are designed and manufactured for a rear bumper with OEM standards. However, pickup trucks can be sold and may be purchased without a rear bumper. The vehicle owner has the responsibility for compliance with Utah law (41-6a-1632 UCA) when the vehicle is operated on Utah roads.*

***NOTE:** *Roll pans are not bumpers. Roll pans are only acceptable when a material is concealed behind the roll pan that meets the strength, vertical height, and securing requirements of a rear bumper. This material must extend the width of the wheel track and meet the requirements of a rear bumper.*

Body - Continued

C. FENDERS

1. Check for removal or alteration of front or rear fenders.

- a. **REJECT** when:

- 1) Any fender has been removed or altered to such extent that it does not cover the entire width and upper 50% of the tire.

****NOTE: Fenders, bumpers and hoods are optional on replica vehicles 1935 and older. See Section 14 Replica Vehicles.***

D. SEATS AND SEAT BELTS

1. Check seats for proper operation of adjusting mechanism and to see that the seats are securely anchored to the floor.

- a. **REJECT** when:

- 1) Seats are not anchored to the floorboard.
 - 2) Seat adjusting mechanism slips out of set position.
 - 3) Seat adjusting mechanism does not function properly.
 - 4) Any driver or passenger seat back is broken or disconnected from base so that it will not support a person's full weight.
 - 5) Seat belts are not installed or are inoperative. (Seat belts are required in all vehicles manufactured after July 1, 1966.)
 - 6) Seat belts are cut, torn, frayed, or otherwise damaged.

Body - Continued

2. Check the motorized safety belts.

Enter the vehicle and close the door, insert the key into the ignition and turn to the on position. A motor causes the shoulder belt to slide along a track starting at the front body "A" pillar and moving rearward to its locked position at the "B" pillar. The shoulder belt warning indicator lamp should illuminate from four to eight seconds.

- a. **ADVISE** when:

- 1) Motorized seat belts do not function as designed.

- b. **REJECT** when:

- 1) Motorized seat belts fail to lock in the rear position.

E. AIR BAGS

1. Check the Air Bag Readiness Light:

Turn the key to the on position. The light will indicate normal system operation by lighting for 6-8 seconds then turning off.

- a. **ADVISE** when:

- 1) Air bag indicator fails to light in the manner prescribed by the manufacturer, continuously flashes, or if five sets of "beeps" are heard concurrent with indicator failing to light.

2. Check Air Bag.

- a. **REJECT** when:

- 1) Air bag has been deployed or is not present when originally equipped on the vehicle.

Body - Continued

F. FLOORBOARDS

1. Check the floorboard in both occupant compartment and trunk for rusted-out areas, or holes, which could permit entry of exhaust gases, or will not support occupants adequately.
 - a. **REJECT** when:
 - 1) Any area of the floorboard is rusted through sufficiently to cause a hazard to an occupant, or exhaust gases could enter the occupant compartment or trunk.
2. Check the space between the floor pan and frame for body lifts.
 - a. **REJECT** when:
 - 1) Lowest part of body floor is raised more than 3" above top of frame, at the mount. UCA 41-6a-1631

G. DOORS

1. Check doors and door components for proper operation.
 - a. **REJECT** when:
 - 1) Doors or door parts are missing, broken or sagging to the extent that the door cannot be opened and closed properly.

***NOTE: Shaved door handles with automatic releases are allowed provided that when the engine is running, and the vehicle is in drive, the wireless remote cannot activate door release switch.**

Body - Continued

H. HOOD

1. Check all vehicles for hood or engine cover. All vehicles must have a hood or engine cover.
2. Check hood and open to check safety catch for proper operation.
 - a. **REJECT** when:
 - 1) Hood or engine cover is missing.
 - 2) Secondary or safety catch does not function properly.
3. Close hood and check for proper operation.
 - a. **REJECT** when:
 - 1) Hood latch does not securely hold hood in its proper fully closed position.
4. Check for aftermarket hood scoop or air duct.
 - a. **REJECT** when:
 - 1) Hood scoop is higher than 4 inches above the top of the hood.
 - 2) Moving parts are exposed above hood.

I. FRAME

1. Check the frame, repairs must meet OEM Specifications.
 - a. **REJECT** when:
 - 1) Has any broken or cracked frame component.
 - 2) Frame is rusted through.
 - 3) Frame has been cut, or portions of the frame have been removed, affecting the strength or integrity of the frame.

Body - Continued

J. MOTOR MOUNTS

1. Check all motor mounts and components. (NOTE: Most passenger, light truck vehicles have three motor mounts / one at front of and two underneath the engine. In addition some motor mounts are fluid filled / oil base).

2. Proper inspection procedure:

Measure the engine movement at the engine mount in order to check for damage to the rubber portion of the mount (heat cracks, separation, splits, and leakage – fluid filled).

a. Apply the park brake.

b. Start the engine.

c. Firmly apply and hold the primary brakes (CAUTION: *this must be done in a safe and controlled manner*).

d. If possible, have an assistant stand in a safe area and check engine movement.

e. Slightly load the engine shifting from drive to reverse a few times.

f. If engine moves significantly (usually more than an inch) from the at rest position, either direction, check for loose engine mount bolts and condition of the engine mount.

g. On fluid filled mounts – check for leakage (NOTE: must be verified that the leak is coming from the mount and not the engine or other components).

3. **ADVISE** when:

a. Minor heat cracks are present or engine moves in excess of one (1) inch in any direction.

4. **REJECT** when:

a. Motor mount bolts and nuts are *broken or missing*.

b. Heat check cracks *cover* the rubber cushion surface.

c. Rubber cushion is *separated* from the metal plate of the mount.

d. There is a *split* through the rubber cushion.

Body - Continued

- e. Engine *sagging* to the point where you hear the mount bottom out or engine misalignment to the point of drive train component compromise. (NOTE: A broken motor mount can cause stress on other mounts and engine compartment components).
- f. Fluid filled mounts are leaking (leakage must be verified from the mount).

K. EXTERIOR REARVIEW MIRRORS

- 1. From the driver's position, check exterior mirror(s) for a clear and reasonably unobstructed view to the rear.

- a. **REJECT** when:

- 1) Required mirrors are not present.

****NOTE: One mirror on driver's side is required on all vehicles manufactured after January 1968. In addition, an exterior mirror on the passenger side is required when tinting is present or the rear view is obstructed.***

- 2. Check to see that mirrors are in the correct location and are mounted securely. Check for cracks, sharp edges or unnecessary protrusion.

- a. **REJECT** when:

- 1) Mirrors are loose enough that rear vision could be impaired.
 - 2) Mirrors are cracked, pitted or clouded to the extent that rear vision is obscured.
 - 3) Mirrors will not maintain a set adjustment.
 - 4) Mirrors do not allow 200 feet of rear visibility.

Body - Continued

L. INTERIOR REARVIEW MIRROR

1. From the driver's position, check interior mirror for proper mounting, location, cracks, sharp edges and ease of adjustment.
 - a. **REJECT** when:
 - 1) Interior mirror is loosely mounted.
 - 2) Interior mirror obstructs the drivers' forward vision.
 - 3) Interior mirror does not provide a clear view of the highway at least 200 feet to rear.
 - 4) Interior mirror is cracked, broken, has sharp edges or cannot be cleaned and rear vision is obscured.
 - 5) Mirror will not maintain a set adjustment.

****NOTE: All vehicles are required to have two rear facing mirrors, one mirror on the driver's side on all vehicles manufactured after January 1968 and an interior or passenger exterior mirror. A mirror on the passenger side is required when tinting is present or the rear view is obstructed.***

M. SPEEDOMETER / ODOMETER

1. Check vehicle to be sure that it is equipped with a properly functioning speedometer and odometer. (41-1a-901 UCA) Although not a cause to reject, all vehicles are required to have a working odometer in order to be registered in the state of Utah.
 - a. **ADVISE** when:
 - 1) Speedometer or odometer is not functional or is disconnected.

****NOTE: Although not a safety item, all vehicles are required to have a working odometer in order to be registered in the state of Utah.***

SECTION 11 - EXHAUST SYSTEM

- The exhaust system includes the exhaust manifold, catalytic converter, the header pipe or exhaust pipe, muffler and the tailpipe.
- Exhaust system must extend to the outside of the passenger compartment.

A. EXHAUST SYSTEM

1. Check the manifold, exhaust or header pipe, mufflers, tail pipes and the supporting hardware.
 - a. **REJECT** when:
 - 1) Muffler is missing.
 - 2) Exhaust system has leaks of any kind on any part of the system. (Excluding drain holes installed by the manufacturer.)
 - 3) Any part of the system is not securely fastened or secured in a manner that is likely to fail, i.e., rope securing tail pipe.
 - 4) Tail pipes do not extend beyond the outer periphery of the passenger compartment or are severely bent or broken.
 - 5) Exhaust system passes through any occupant compartment.
 - 6) Muffler cutout or similar device is installed.
 - 7) Exhaust system is so constructed or located that an individual may be burned upon entering or leaving the vehicle.

***NOTE: After Market Muffler Devices:**

(UCA 41-6a-1626(b)) Every motor vehicle shall at all times be equipped with a muffler or other effective noise suppression system in good working order and in constant operation. A person may not use a muffler cut-out, bypass, or similar device. Excessive or unusual noise is prohibited. (Additional noise ordinances may be enforced by city and/or county.)

SECTION 12 - FUEL SYSTEM

- The fuel system includes the fuel tank, the fuel pump and the necessary piping to carry the fuel from the tank to the carburetor or injection system.
- All motor fuel tanks attached to the vehicle fuel system must be secured and meet the standards as listed in FMVSS 571-301.

A. FUEL SYSTEM

1. Check the fuel tank, the fuel tank support straps, the filler tube (rubber, plastic, or metal), the tube clamps, the fuel tank vent hoses or tubes, the filler housing drain, the overflow tube and the filler cap.
 - a. **REJECT** when:
 - 1) Has any part of the system that is not securely fastened.
 - 2) Has fuel leakage at any point in the system.
 - 3) Fuel tank filler cap is missing.
 - 4) Has physical damage to any fuel system component.

****NOTE: Check vehicles that have been altered to ensure that the fuel tank is not exposed. A skid plate or other device of sufficient strength to prevent damage must protect unprotected fuel tanks.***

SECTION 13 – OFF ROAD VEHICLES / "SAND" / "DUNE" BUGGIES

- A. Check vehicles that have been modified for off-road use for compliance with Safety Inspection Rules, Utah State Law, and Federal Motor Vehicle Safety Standards.**
1. **REJECT** when:
- a) Does not meet all inspection requirements for regular passenger vehicles.
 - b) Does not provide an enclosure or cockpit for driver and occupants.
 - c) Has a Baja or T-bar style bumper. (See Section 10 Paragraph B. Bumpers)
- B. Three wheel and four-wheel off-highway vehicles (OHV's) were not designed or constructed for highway use. OHV's do not meet Federal Motor Vehicle Safety Standards and may not be registered. DO NOT INSPECT OHV'S.**

Did you know?

There is a state agency that deals with OHVs, answers questions, and enforces the laws on them. It is the Utah State Parks and Recreation. Their website has helpful information. They also have a toll-free hotline for information.

Utah State Parks and Recreation's website is:

www.stateparks.utah.gov, then select "Off-Highway Vehicles" from the menu

Toll-free number: 1-800-OHV-RIDE.

Local Salt Lake number: (801) 538-7433.

****Note: Pocket Bikes are subject to local laws and local enforcement.***

SECTION 14 – REPLICA VEHICLES

A. DEFINITIONS:

1. “REPLICA VEHICLE”: A motor vehicle with a body that is or resembles the body of a motor vehicle with a model year prior to 1975; and that it may have a significant drive train or equipment upgrade.
2. “EQUIPMENT COMPLIANCE”: The minimum safety equipment must meet the requirements of Utah Safety Inspection Rules and Utah State Tax Commission rules.

B. MINIMUM SAFETY EQUIPMENT REQUIREMENTS:

1. Hydraulic service brakes on all wheels with current vehicle brake and stopping standards.
2. Parking brake operating on at least two (2) wheels on the same axle.
3. Seat belts for all passengers.
4. Sealed beam or halogen headlamps.
5. Brake Lamps.
6. Turn signal lamps and switch.
7. AS-1 safety glass or Lexan.
8. Electric or vacuum windshield wiper in front of the drivers view.

****NOTE: Fenders, bumpers and hoods are optional on replica vehicles 1935 and older. Exhaust systems may discharge along the side provided they discharge at a point behind the rear edge of the door and exhaust is directed away from the vehicle. The ground clearance for replica vehicles shall meet the 3 inches ground clearance requirements of U.C.A. 41-6a-1631. The vehicle identification for a replica vehicle shall be a number stamped on the frame of the vehicle, or if no such numbers, as established pursuant to R873-22-15M Department of Motor Vehicle Rules.***

C. REJECT when:

1. Any of the above requirements are not met.

SECTION 15 – LOW-SPEED VEHICLES

A. DEFINITIONS:

1. “LOW-SPEED VEHICLES”: A four wheeled electric motor vehicle that is designed to be operated at speeds of not more than 25 miles per hour; and has a capacity of not more than four passengers, including the driver. “Low-speed vehicle” does not include a golf cart or an off-highway vehicle.
2. “EQUIPMENT COMPLIANCE”:
The minimum safety equipment must meet the requirements of Utah Safety Inspections Rules and Utah State Tax Commission rules.

B. MINIMUM SAFETY EQUIPMENT REQUIREMENTS:

1. Headlights;
2. Front and rear turn signals, tail lamps, and stop lights;
3. Reflex reflectors one on the rear of the vehicle and one on the left and right side as far to the rear as practical;
4. A parking brake;
5. A windshield that meets the standards under 41-6a-1635 (see windshield section in manual), including a device for cleaning rain, snow, or other moisture from the windshield;
6. An exterior rearview mirror on the drivers side and either an interior rearview mirror or an exterior rearview mirror on the passenger side;
7. A speedometer and odometer;
8. Braking for each wheel;
9. A low-speed vehicle shall not be altered from the original manufacturer’s design;
10. Meet the minimum safety belt requirements as set forth in 41-6a-1803.

****Note: These vehicles are exempt from defroster requirements.***

C. REJECT when:

1. Any of the above are not met.

**UTAH HIGHWAY PATROL
VEHICLE SAFETY SECTION**



**ORDER FORM
INSPECTION SUPPLIES**

Station Number _____

Paper Certificates / Passenger Vehicle

\$100.00 per book of 50 certificates

Inspection Certificate Book (Quantity of books) _____ X \$100.00 \$ _____

Certificate Report Forms (No Charge)

Certificate Report (Quantity of books) _____

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Commercial Vehicle Sticker (Quantity of books) _____ X \$50.00 \$ _____

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(Quantity of stickers) _____

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Affidavit Books (Quantity of books) _____

Report Forms (No Charge)

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Safety Inspection Manual

\$ 10.00 set of 3 (Motorcycle / Passenger Vehicle Light

Truck / Tractor Trailer Bus Vehicles

Safety Inspection Manual (Quantity of books) _____ X \$10.00 \$ _____

Order Forms

Order Form (Quantity) _____

Total \$ _____

INSPECTION REPORTS ARE DUE WITH THIS ORDER

Mail to:

**UTAH HIGHWAY PATROL
VEHICLE SAFETY INSPECTION
5500 WEST AMELIA EARHART DRIVE, STE #360
SALT LAKE CITY, UTAH 84116**

DEFINITIONS

The following word definitions are found in the Webster's H New Riverside University Dictionary.

ABSORB - To take in through or as if to soak in or up. *Absorbed - Absorbing Absorbs - Absorbability.*

ACCUMULATOR - An automobile storage component.

ACUTE - Extremely serious or significant.

ADAPTER - A device used to effect operative compatibility between different parts of one or more pieces of apparatus.
Adapter.

ADEQUATE - Able to satisfy a requirement.
Adequacy - Adequateness -Adequately.

ADJUSTMENT - To change so as to match or fit. To bring into proper relationship.
Adjust - Adjusted - Adjusting - Adjusts Adjustable.

ADVISE – “To Notify” to inform customer of items in an inspection that will pass but will need to be repaired at a later date.

AFTER-MARKET -The demand for goods or services associated with the upkeep of a previous purchase.

AIR-BAG - An automotive safety device designed to inflate upon collision and prevent passengers from pitching forward.

ALTERED - To make different to modify. Alter - Altering.

ANCHORED - Something that provides a rigid point of support, stability, or security.
Anchor - Anchoring - Anchors

ANTI-LOCK - Computerized power surging system that keeps brakes from locking into a frozen position.

APPLIED - Put into practice or a particular use.

APPROPRIATE – Suitable; fitting.

ASPIRATED - To remove liquids or gases with an aspirator. *Aspirate - Aspirates Aspirating.*

ASSEMBLY - The combining of manufactured parts to make a completed product, esp. a machine.

AUTOMATIC - Acting or operating in a manner essentially independent of external influence or control. Self-regulating.

AUXILIARY - Giving or capable of giving assistance or support.

AXLE - A supporting shaft or member on which a wheel or pair of wheels revolves.

BALL BEARING - A friction-reducing bearing consisting of a ring shaped track containing freely revolving hard metal balls against which a rotating shaft or other part turns.

BASE - The lowest part of a structure as in foundation.

BEARING - A part supporting another machine part.

BENT - Not straight, crooked.

BINDING - To be tight and uncomfortable. To restrain.

BLOCKS - To support, strengthen, or retain in place by a block.

BODY - The passenger and cargo-carrying section of an aircraft, ship or vehicle.

BOLT - A fastener having a threaded pin or rod with a head at one end, designed to be inserted through holes in assembled parts and secured by mated nut that is tightened by application of torque.

BRAKE - A device for reducing or stopping motion, as of a vehicle, esp. by contact friction.

BRAKE DRUM - A metal cylinder to which pressure is applied by a braking mechanism so as to arrest rotation of the wheel or shaft to which the cylinder is attached.

BRAKE FLUID - Liquid used in a hydraulic brake system.

BRAKE LINING - The covering of a brake shoe or pad.

BRAKE PAD - A flat block brake lining that presses against the disc of a disc brake.

BRAKE SHOE - A curved block, attached to the brake lining, that presses against and reduces or stops the rotation of a wheel or shaft.

BROKEN - Forcibly fractured into pieces; shattered.

BULGES - A protruding part, as an outward curve or swelling.

BUMP - To cause to knock against an obstacle; displace.

BUMPER - Either of two metal structures, typically horizontal bars, attached to the front and rear of a car to absorb the impact of a collision, a protective device used to absorb shocks

BUSHING(S) - A fixed or removable lining used to constrain, guide, or reduce friction.

CALIBRATE - To check, adjust or standardize systematically the graduations of a quantitative measuring instrument.

CALIPER - An instrument composed of two curved hinged legs, used for measuring internal and external dimensions.

CERTIFICATE - A document testifying to accuracy or truth.

CHAFED - To wear away by friction or irritation.

CHASSIS - The rectangular steel frame, supported on springs and attached to the axles, that holds the body and engine of an automotive vehicle.

CIRCUMFERENCE - The boundary line of a circle.

CLAMP - A device for joining, gripping, supporting or compressing structural or mechanical parts.

CLEAR(LY) - Free from what dims, obscures or darkens: Transparent.

CLOUDED - A dark blemish or spot, something that obscures.

COIL - A series of connecting spirals or connecting rings formed by winding or gathering.

COLLAPSE - An abrupt failure of function, strength.

COMPONENT - A constituent element, as of a system, a part of a mechanical or electrical complex.

COMPUTERIZED - Of or relating to a computer or the use of a computer.

CONTAMINATED - To make impure by mixture or contact.

CORRODE - To dissolve or eat away gradually by chemical reaction like rust.

CRACKS - To break without dividing into parts.

CRIMPS - To press or pinch into small regular ridges or folds.

CUSTOM - Specializing in the selling of made-to-order goods.

CUTS - To separate into parts with or as if with a sharp-edged instrument; sever.

CYLINDER - The chamber in which a piston of a reciprocating engine moves.

DAMPING - The capacity built into a mechanical or electrical device to prevent excessive correction and the resulting instability or oscillatory conditions.

DAMPEN - DAMPENING - To make slightly wet, moisten.

DAMAGE - Impairment of the usefulness or value of person or property.

DEFECTS, defective - A fault or imperfection: having a defect: faulty.

DEFROSTER - A heating device designed to remove ice or frost or prevent its formation.

DEPRESS - To push down.

DETERIORATED - To lower or impair in quality, or value.

DIAMETER - A straight segment passing through the center of a figure, esp. of a circle or sphere, and terminating at the periphery.

DISCONNECT - To interrupt or break the connection of or between.

DISCOLORED - To spoil or alter the proper color of stain; to become faded.

DISLOCATED - To displace from the proper or usual relation- ship with adjoining parts.

DISTORTION - To twist out of proper shape or relation; to contort.

DRAG - To cause to move with great reluctance, weariness, or difficulty.

ELECTRICAL - Of, relating to, or operated by electricity.

ELONGATED - To make or grow longer, extended, lengthened.

ENGINE - A machine that converts energy into mechanical motion.

ERRATIC - Lacking regularity, consistency, or uniformity.

ETCHING - To cut into the surface by the action of acid, printing designs or pictures.

EXCESS - An amount beyond the normal, sufficient, required or appropriate. Greater or more than the requirement.

EXPOSED - To remove protection from, the act of making visible.

EXTEND - To stretch or spread out to full length.

EXTERNAL - An exterior surface or part.

FAILURE - A cessation of proper functioning, a decline in strength or effectiveness.

FENDERS - A metal guard over the wheel of an automotive vehicle.

FLEXIBLE - Capable of being bent or flexed; pliable.

FLUSH - To be cleaned by a rapid brief gush of water.

FMCSA – Federal Motor Carrier Safety Administration

FMVSS - Federal Motor Vehicle Safety Standard

FORCE - To compel through pressure or necessity; to move against resistance.

FRAME - A skeletal structure designed to shape and support.

FRAYED - To wear away by rubbing, a frayed spot as on fabric.

FRICTION - The rubbing of one object or surface against another.

FROZEN - Rendered immobile.

FUNCTIONAL - Designed for or adapted to a specific function or use. To have or perform a
GASKET - A seal or packing used between matched machine parts or around pipe joints to prevent the escape of a gas or fluid.

HEIGHT - The distance from the base to the top of an object.

HORIZONTAL - Parallel to or in the plane of the horizon.

HYDRAULIC - Of, involving, moved, or operated by a pressurized fluid, esp. water.

ILLEGAL - Forbidden by law, by official rules. function.

INDICATOR - An instrument as a meter or a gauge for monitoring the operation or condition of a physical system, as an engine.

INOPERATIVE- Not working or functioning.

INSTABILITY - Lack of stability.

JAGGED - Having sharp or ragged projections on a surface or edge.

JAMMING - To activate or apply suddenly, as automotive brakes. To cause to lock in inoperable position.

JOINT (S) - A point or a position at which two or more things are joined. A configuration in or by which two or more things are joined.

KINKED - A tight curl or sharp twist in a wire-like material, typically caused by the tensing of a looped section.

KNOT, knots - A compact intersection or interlaced material, as cord, ribbon, or rope. To tie in or become entangled.
LAMINATED – Made up of bonded layers.

LAMP - A device that generates, heat, light, or therapeutic radiation

LATCH, latching – To close or lock with or as if to latch.

LEAF SPRING - A composite spring used especially in automotive suspensions, consisting of several layers of metallic strips joined to function as a unit.

LEAK, leakage - To allow the passage or escape of something through a breach or flaw. A crack or opening that permits something to escape from or enter a container or conduit.

LENS - A carefully ground or molded piece of glass, plastic, or other transparent material with opposite surfaces either or both of which are curved by means of which light rays are refracted so that they converge or diverge to form an image.

LEVERAGE - The action of a lever. The mechanical advantage of a lever.

LINKAGE - A system of interconnected machine parts, as rods, springs, and pivots, for transmitting power or motion.

LOOSE - looseness - Not tight fitting, not bound, stapled, bundled or gathered together.

MALADJUSTMENT - Faulty adjustment as in a machine.

MECHANISM - Mechanical device, and arrangement of machine parts.

METALLIC - Of, relating to or having the characteristics of a metal.

MINIMUM - The least possible quantity or degree. The lowest amount or degree reached.

MIRRORED - A surface able to reflect enough undiffused light to form a virtual image of an object placed before it.

MISPLACED - To put in wrong place.

MODIFIED - To change in form or alter. To make less extreme, severe or strong.

MOVEMENT- A mechanism that produces or transmits motion.

MUFFLER - A device that absorbs esp. one used with an internal combustion engine.

OBSCURED - Deficient in light, dark. Lacking a clear delineation, indistinct.

OEM - Original Equipment Manufacturer.

PATCH - To mend, repair, or put together, esp. hastily or shoddily.

PAWL - A hinged or pivoted device adapted to fit into a notch of a ratchet wheel to impart forward motion or prevent backward motion.

PERIPHERY - The outermost region or part within a precise boundary.

PIT, pitted - A natural depression or small indentation on a surface. To make cavities, depressions or scars.

PLEXIGLAS - A trademark for a light, transparent, weather-resistant thermoplastic.

PRESSURE - An application of continuous force by one body on another that it touches.

PROTRUDE - To push or thrust outward, to jut out.

PUMP, pumping - A device or machine for transferring a gas or liquid from a source or container through tubes or pipes to another container or receiver. To cause to operate with the up and down motion of a pump handle.

RATCHET - A mechanism consisting of a pawl that engages the sloping teeth of a bar, or wheel, of a ratchet.

RATING - To specify performance limits.

REFLECT - To throw or bend back light.

REJECT – To deny a vehicle to pass an inspection with safety items that fail to function properly.

RESERVOIR -A receptacle for storing a fluid.

RESTRICT, restricted - To hold within limits, to confine.

RIM - The circular outer part of a wheel , furthest from the axle. A circular metal structure around which a wheel tire is fitted.

RIVET - A metal bolt or pin having a head on one end, used to fasten metal plates or other objects together by inserting the shank through a hole in each piece and hammering down the plain end so as to form a new head.

ROTOR - A rotating part of an electrical or mechanical part.

RUB/rubbing - To subject to the action of something that moves back and forth with friction and pressure.

SAGGING - To lose strength, firmness, or resilience.

SEAL/SEALED - An adhesive agent used to close or secure something or prevent seepage of moisture or air.

SECURE, secured - Not likely to fail or give way, stable, well-fastened.

SEEP, seepage - to pass slowly through small openings or pores. Something that has seeped.

SEIZE, seizing - To fuse or cohere with another part due to high pressure or temperature, slowing or stopping further motion.

SCRATCH, scratched - To make a narrow line or mark with a sharp instrument. To scrape or strike on an abrasive surface.

SEVERE - Corresponding strictly and rigidly to established rule.

SEVERED - To become cut or broken apart.

SHACKLE - A device used to fasten or couple. (Shackles, something that restrains or confines.)

SHADE, shaded - Light reduced in intensity due to interception of the rays; partial darkness. To obscure or to darken.

SHATTER, shattered - To cause to break or burst suddenly into pieces. A fragmented or splintered condition.

SHIMMY - Abnormal vibration, as in the chassis of a motor vehicle.

SLIP, slippage - To move quietly and smoothly, glide. To cause to move in a smooth easy or sliding motion.

SMEAR - To stain by or as if by spreading or daubing with a sticky, greasy or dirty substance.

SNAG - A sharp rugged, or jagged protuberance.

SPECIFICATIONS - An exact written description of an item.

SPRINGS - An elastic device, as coil or wire that regains its original shape after removal of stress.

STABILITY - Resistance to sudden change, dislodgement, or overthrow. Reliability, dependability.

STEEPING - To direct the course, to maneuver, to guide a vessel or vehicle.

STRUT - To brace with a supporting bar or rod.

SUSPENSION - The system of springs that protects the chassis of a motor vehicle from shocks transmitted through the wheels.

SWITCH - A device for breaking or opening an electrical circuit or for diverting current from one conductor to another.

SYSTEM - A group of interacting mechanical or electrical components.

TENSION - A force tending to stretch or elongate something, the measure of such force.

TILT - To cause to slope as by raising one end.

TINT, tinting - A shade of a color, a slight coloration, a shaded effect. To give a tint or take on a tint.

TORSION BAR - A part of an automotive suspension consisting of a bar that twists to maintain stability

TRACK - To keep a constant distance apart; Used as a pair of wheels. To be in alignment.

TRANSMISSION - An automotive assembly of gears and associated parts by which power is transmitted from the engine to a drive shaft.
TRAVEL - To move from one place to another.

TREAD - The grooved face of a tire.

U-BOLT - A bolt shaped like the letter "U", fitted with threads and a nut at each end.

UNLADEN - Without load.

USDOT - United States Department of Transportation.

VACUUM - A state of being sealed off from external or environmental influences.

VALVES - A device that regulates the flow of gases, fluids or loose materials through a pipe, the moveable control element.

VERTICAL - Being at right angles to the horizon.

VISUAL - Capable of being seen by the eye.

WEeping - To ooze, exude, or let fall drops of liquid. Drops of moisture.

WEIGHT - A measure of the heaviness or mass of an object.

WELDED - To join metals by applying heat, sometimes with pressure and sometimes with an intermediate or filler metal having a high melting point.

WIDTH - The measurement of the extent of something from side to side.

WORN - Affected by use or wear, impaired, damaged, or showing fatigue by use or wear.

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